American Anthropologist

NEW SERIES

VOL. 34 JULY-SEPTEMBER, 1932 NO. 3

SOME PROBLEMS OF FAR EASTERN ARCHAEOLOGY[1]

By S. YUNG LIANG

WITH the exception of the crude stone implements found in West Mongolia, which recall the European Eolithic types but otherwise have no valid claim to similar antiquity, the earliest human relics found in the Far East belong to the Palaeolithic.

The geographical distribution of the Palaeolithic finds is as follows:

(1) The South Siberian group in the region around the headwaters of the Yenisei river and in the Transbaikal basin, including Tomsk, Krasnoyarsk, Minussinsk, Irkutsk, etc.

(2) The North Chinese group in the Ordos region and in the northern parts of Shansi and Kansu. Between these two groups, there is a subgroup in the Orok Nor lake region in West Mongolia, and the trace of another (actually only one surface specimen) near the East Siberian seaport town, Vladivostok.

(3) There is the Indian group, which is included here for comparison.

Among these, only a few sites in the South Siberian and the North Chinese groups are comparatively adequately studied. No summary of the sites will be attempted here, but a few facts concerning the stratification, faunal, and cultural contents of the Palaeolithic deposits are given in the following tables to facilitate comparison and study.

CHOEI-TONG-KEOU, ORDOS (Teilhard)

Stratification	*Faunal contents*
Surface soil (with Neolithic)	Horse
Post-loess river deposit	Rhinoceros
Conglomerate layer	Hyena
Loess (with Palaeolithic)	Gazelle
Conglomerate layer	Antelope
Red clay	Ox
	Ostrich eggs

[1] This paper was completed in December, 1929.

SJARA-OSSO-GOL, ORDOS (Teilhard)

Stratification	*Faunal contents*
Surface soil (Neolithic)	Elephant (*Elephas* sp.)
Lacustrian deposit	Rhinoceros (*Rhinoceros Ticho.*)
Ancient dunes	Horse (*Equus hemionus, Equus* sp.)
Palaeolithic level	Camel (*Camelus;* cf. Knoblochi)
	Giant deer (*Cervus megaceros* var.)
	Canadian deer (*Cervus canadensis*)
	Gazelle (*Gazella przewalski*)
	Sheep (*Ovis ammon*)
	Wild cattle (*Bos primigenius*)
	Hyena (*Hyaena spelaea*)
	Ostrich
	Many other species

GRAND LOESS REGION (Teilhard)

Stratification	*Faunal contents*
Loess	*Helix* and *Pupa*
Stratified sandy beds	
Conglomerate layer	

CHOEI-TONG-KEOU	SJARA-OSSO-GOL	GRAND LOESS
Cultural contents	*Cultural contents*	*Cultural contents*
Anvils	Microliths	Scrapers
Hammers	Worked horns	Hammers
Nuclei	Worked bones	
Rough blanks, or bifaces		
Points		
Side-scrapers		
End-scrapers		
Burins		
Microliths		

AFONTOVA, SIBERIA (Merhart)

Stratification
Black humus
Yellowish-brown loamy loess (with Palaeolithic)
Sand and gravel layers

PERESSELENTSCHESKIJ POINT, SIBERIA (Merhart)

Stratification
Dune sand
Dark Iron Age level
Sand

Yellow loess (with Palaeolithic)
Rubble

UPPER YENISEI REGION

Faunal contents	*Cultural contents*
Reindeer (*Rangifer tarandus*)	Crude cleavers
Horse (*Equus caballus*)	Side scrapers
Bison (*Bison priscus*)	Points
Wild cattle (*Bos primigenius*)	Scratchers
Giant deer (*Cervus megaceros*)	Nuclei
Antelope (*Antilopa saiga*)	Blade-like flakes
Elephant (*Elephas primigenius*)	Bone points
Rhinoceros (*Rhinoceros ticho.*)	Bone awls
Cave fox	Reindeer horn baton
	Microliths
	Bone and horn anvils

It is clear from these tables that the Siberian and Chinese groups are strikingly similar. All the sections here show nearly the same order of stratification: there is at the base a rubble layer, which is superposed by a loess (the Chinese phase) or a sandy (the Mongolian phase) layer, on which is again laid the surface layer. The lists of faunal remains of the two groups have at least four species in common. The implements are generally the same; and the culture-bearing strata in both areas have been assigned to the Middle Pleistocene time. The faunal and industrial remains point to a steppe climate and a Mousterian-Aurignacian type of culture.

However, there are minor differences which raise many questions that cannot be properly answered by the available data, though it is important to keep them in mind in future researches in this field. Most of these problems will have to be solved for archaeology by the geologists and the paleontologists.

First of all there is the problem of stratigraphy. The culture-bearing strata in the various sites may have been approximately contemporaneous, yet the differences among the three principal Chinese sites and between these and the Siberian sites are too great to be wholly neglected. The time relation of the Mongolian and Chinese phases and the Grand loess, and the relation of these to the Siberian stratum have not yet been satisfactorily worked out. Are these variations entirely due to latitudinal and other environmental differences, or are they the result of a difference in time?

As for paleontology, in its present status in this region it can do nothing to help solve this question. The nearly exact identity of the faunal con-

tents of the three Chinese sites indicates contemporaneity. But an inspection of the table will show that in spite of four common species—*Bos primigenius*, *Cervus megaceros*, *Antilopa saiga*, and *Rhinoceros tichorhinus*—there is considerable difference between the Chinese and the Siberian group. The species most commonly found in the Chinese group, such as *Rhinoceros tichorhinus*, *Bos primigenius*, *Equus hemionus*, etc. are found either only rarely or not at all in the Siberian group, while the most abundant Siberian species, such as *Rangifer tarandus*, *Equus caballus*, *Bison priscus*, etc., are lacking in the former. Both of the faunal groups, when taken as a whole, indicate a steppe climate, but the emphasis is decidedly different. One shows a drier steppe climate, as evidenced by the abundant reindeer remains; the other, a moister climate, implied by the quantity of rhinoceros bones. Again the question may be asked, Is this due solely to a latitudinal difference or to a chronological difference? Was the reindeer found in Siberia and absent from the Ordos region simply because it had never got beyond the southern border of Siberia, and the predominance of rhinoceros in the Ordos simply because of the expectedly better water supply in that area? Or was it because reindeer had replaced the moisture-loving rhinoceros in Siberia with the onset of a glacial maximum,[1a] and because the lesser degree of removal from the wet interglacial period had kept the rhinoceros alive in the Ordos when the Palaeolithic stratum was deposited? Either of these positions may be successfully taken, and plausible theories built for each, but without further discoveries they cannot even assume the aspect of hypotheses.

The cultural evidence renders the situation still more intricate. However, there is no question of origin here. The occurrence of Mousterian and Aurignacian types of stone implements as well as microliths in an isolated stratum in the various sites without any related culture above or below appears to show that the origin of the culture is to be sought somewhere else. The conceivability that would come first to the mind is the diffusion from either of the two groups to the other, the two being both similar and dissimilar enough to make this not impossible. But it must be remembered that the deposition of the Siberian Palaeolithic remains took place during a cold dry period, and it is very doubtful whether the Palaeolithic men were able to cross the barriers set by the Gobi desert and the snow-clad mountains. The next suggestion that would naturally occur to us—a common origin somewhere in the West—has a better case. But there still remains the difficulty of the mixed occurrence of Mousterian, Aurig-

[1a] An unwarranted assumption of parallelism with European glaciation.

nacian, and Microlithic types of implements in a single stratum, which in none of the cases exceeds the thickness of 50 cm. And the contrast between the crude Mousterian types of the Chinese group and the full Mousterian types (as evidenced by the abundant occurrence of typical Mousterian side-scrapers) of the Siberian group, as well as the absence in the former and the presence in the latter of bone and horn industry, have to be explained. Assuming with some European authorities a pre-Mousterian culture all over the world, we may theorize that before the carriers of the Mousterian type of culture migrated into North China, they came into contact with the Aurignacian influence and adopted some of the latter's cultural traits. For the Siberian group the theory may likewise be held that a more advanced Mousterian group had come under the influence of the Aurignacians and was pressed by the latter into the Upper Yenisei and Transbaikal basin. But there still remain the microliths, which are not very diminutive and carry steep bold marginal chipping of Aurignacian aspect. They cannot be entirely explained away by the theory of adaptation to local material, which in the present case is quite similar in the two areas. However, there is no reason why the West European typology and chronology should be exactly followed in the study of the Middle Pleistocene cultural remains in the Far East, and we should not be too much surprised if future research revealed a distinct sequence of cultures there.

The Palaeolithic group discovered in the Orok Nor Lake region in West Mongolia was more likely to belong to the South Siberian group, for it was separated from the Ordos group by the Gobi desert. The finding of an Aurignacian-like stone point at the foot of a small cliff near the town of Vladivostok may perhaps be taken as an indication of the eastward extension of this culture type.

No human skeletal remains have been recovered from the Palaeolithic stratum of any of these sites. And the only trace of Early men are three teeth[2] from the upper Pliocene deposit in a cave near the village of Chou Kou Tien, seventy lis southwest of Peiping, which are claimed to be similar to and roughly contemporaneous with the Heidelberg jaw.

The Palaeolithic type of culture in India has not been nearly so adequately studied. But the existence of stone implements of the Palaeolithic type is well known, and it is only necessary to call attention here to the interesting sequence of Mousterian, Capsian and Tardenoisian cultures, paralleling similar series in Syria, North Africa, and Southern Spain. Some statements about the Northern groups may lead one to the theory of a Northern

[2] It was recently reported in the newspapers that parts of ten skeletons had been recovered from the same cave.

Palaeolithic sequence of Mousterian followed by Aurignacian, and a Southern Palaeolithic sequence of Mousterian followed by Capsian, the two cultures developing separately and coming in contact, so far as is known, around the Mediterranean basin. Of course this is a mere supposition, but the situation is interesting and worth looking into.

The resemblance between the so-called Ceylon Palaeolithic stone implements and those from the Archaic period of the Hoabinhian culture in Indo-China is of high interest. They are similar in form and make, but absolutely different in material. In both areas the finds were associated with remains of mammals still existing in those places and with no definite geological level. With much hesitation the authorities have assigned them to the Magdalenian. But the almost total absence of bone and horn industry makes this extremely doubtful. And no matter whether they were or were not parallel to any of the European Palaeolithic phases, these stone implements were most probably pre-Neolithic. The absence of pottery and of the technique of polishing stones, as well as the extremely archaic appearance lend support to this view. The occurrence of Chellean and Acheulian amygdaloid type of implements is of much significance, for they tie up these groups, at least typologically, with the Indian Palaeolithic culture, even if contemporaneity is out of question, and add color to the theory of a Northern and a Southern Palaeolithic or basic group in the Far East.

The relation of the Ceylon with the Southern Indian group, and of the Indo-Chinese group with these two groups, is as yet uncertain. Were both Ceylon and Indo-China marginal recipients of cultural influence from India in that early period, as they were in later times, or did Indo-China receive indirectly from Ceylon? The scarcity of remains of Magdalenian type in India seems to favor the latter view. But much more exploration has to be done before anything like a definite statement can be made. And finally there is also the problem of the relation of this whole South Far Eastern to the Northern group.

As for the Neolithic culture, it is distributed over nearly the whole of the Far East, but sites which have been scientifically investigated and reported upon are very few indeed. As in the case of the Palaeolithic sites, these are again concentrated into a Northern (Chinese, Mongolian, and Manchurian) group, a Southern (Indo-Chinese) group, and a peripheral (Korea-Japanese) group. And for each of these groups there is a relative chronology, based largely on stratigraphical observations.

The chronology for the Japanese area is a little out of date, and we

have to wait for the evolution of a more complete one from the mass of material gathered in recent years. For the Northern area, the most complete one is N. C. Nelson's tentative chronology for the Western Gobi Desert region, beginning from the latest. The levels run in the following order:

1. Pure Mongol
2. Pre- or proto-Mongol
3. Neolithic
4. Mesolithic
5. Palaeolithic

Many elaborate chronologies have been worked out by various authors for the North Chinese Neolithic. In the Indo-Chinese area in general, the following series is usually found:

1. Bronze, and stone
2. Late Neolithic
3. Intermediate
4. Lower Neolithic
5. Pre-Neolithic

Leaving aside the Japanese area for the moment as peripheral, it is significant that West Mongolia is the only region where a consecutive series of cultural strata from the Palaeolithic up to the recent time has been recorded. North China, East Mongolia, South Manchuria, and North Korea, where extensive archaeological explorations have been carried on in recent years, have not revealed anything approaching a connected sequence of cultural levels. In the Ordos region, according to the stratification, there is a big gap, involving considerable change in the climate and topography of the country, between the Middle Pleistocene Palaeolithic deposit and the surface Neolithic remains. In the Yellow River basin in North China, only late Neolithic sites have been found. Though forty or more of these have been excavated, no discovery of the superposition of Neolithic on Palaeolithic, or of Bronze on Neolithic, has ever been made. Further to the east, in East Mongolia, South Manchuria, and North Korea, a similar late Neolithic is generally found in the surface soil, mixed with bronze and iron objects.

Looking more closely at the West Mongolian chronology, we find that the pre- or proto-Mongol stage, which follows immediately on the Neolithic stage, is characterized by iron, not by copper or bronze objects, and is associated with stone inclosures and stone heaps. The same situation is also found in East Mongolia and South Manchuria. It has been rather plausibly suggested that the origin of this iron culture is to be sought in the

headwater region of the Yenisei, where it has been found to superpose on the Palaeolithic level, though separated from the latter by a sterile layer.

All through Indo-China, from Tonkin to Cambodia, generally the same cultural sequence is found. But considerable differences exist among the local groups, each having its own local characteristics. Thus, there is the Hoabinhian group with its developed Archaic phase, the Bacsonian group with its developed late Neolithic phase, and the Cambodian group with its developed Bronze phase. So far no iron remains have ever been found with any of these phases.

To turn to the different cultural stages, the Mesolithic type of culture is found only in West Mongolia. It may be reckoned equivalent to the European Azilian in its stratigraphical position and in some of its implements. The typological parallelism with the West European culture is interesting enough, but it will gain much more significance if the relation of this culture to the underlying Palaeolithic deposit is more definitely elucidated. Did the Mesolithic develop from the Palaeolithic in this region, or did the change result from contact with the outside, and what part did the Microlithic play?

In Indo-China no cultural remains of Mesolithic type have been found between the pre-Neolithic and the lower Neolithic. Instead there is a truly transitional type that serves as a perfect connection between the two stages. This probably indicates a local development which differs not only from the group in West Mongolia to the far North, but also from the South Indian group where Tardenoisian types of remains are claimed to have been found. Some of the archaic Japanese stone implements, by the way, show distinctly this transitional character.

The study of the Neolithic culture is overshadowed by that of the late Neolithic culture in the Far East, and especially in the Northern groups. It is by far the least defined stage. In the north it occurs along the western and eastern borders of Mongolia, South Manchuria, and in traces seemingly along the margin of the Lop Nor desert. It is characterized by handmade pottery decorated with imprinted, incised, and modeled ornament; by partly polished stone implements as axes; grinding-stones; and, above all, by chipped stone tools and weapons, such as knives, scrapers, arrowheads, and flakes. In West Mongolia there is evidence that it is developed from the local Mesolithic. Its situation on the borderland between mountains and deserts is interesting. Is this position only apparent, or does it point to a semi-nomadic people, as the rarity of agricultural implements and the comparative abundance of arrowpoints would suggest? The river of lacustrian deposit which overlies the loess that contains the

Palaeolithic remains and on which the late Neolithic remains are found, indicates most probably a more humid climate than that of the present during the Neolithic time. Did this favorable condition lead to the expansion of the West Mongolian group east into East Mongolia and west to the outskirt of the Lop Nor desert? And if it did, then why did it not expand into the fertile Yellow River basin of North China?

This leads us to the problems of the late Neolithic culture. In Mongolia and in Manchuria the late Neolithic culture was developed from the local Neolithic culture and in its turn developed into the more recent cultures. But in North China there is an apparent gap between the Palaeolithic and the late Neolithic. Is this apparent absence of the full Neolithic remains an accident of exploration, or is it really non-existent in this area? There are indications that it is due to insufficient exploration and to the failure to study the existing material in a systematic fashion, and that the late Neolithic of North China evolved from a generalized Neolithic culture similar to that of Mongolia and Manchuria. But any definite solution of the problem can only result from future investigation.

During the late Neolithic time definite local characteristics seem to have developed in the different areas: broad flat perforated stone knives, pointed-based and tripod pots and painted pottery in the North Chinese area; high-footed pots decorated with incised, punched, and modeled ornaments in the Mongolian-Manchurian area. Cultural streams from the two areas seem to have met in the region north of the gulf of Pe-chi-li about the close of the North Chinese Neolithic, as evidenced by the mixing of pottery and stone types in that region.

The relation between these two cultural areas is made complex by the recent discoveries at P'i-tzu-wo, South Manchuria. The mixed occurrence of late Neolithic stone implements and pottery with early Han bronze objects and pottery, suggests that the Neolithic culture had in this area lasted down to the first century before Christ. Furthermore, the recovery from the same site and within the same deposit of a group of painted pottery which differs radically from the North Chinese group in the application of paint after firing, in the strictly rectilinear design, and in the low hollowed cone-like foot, calls for a reorganization of our knowledge of Far Eastern painted pottery.

In Indo-China the Neolithic culture is also comparatively vaguely defined. Perhaps this is because it directly evolved from the pre-Neolithic culture and because of its generalized character. It has the basic axe and adze types which not only occur in the Far East but also in Europe and in Africa. But the almost total absence of small implements, such as flake

blades, scrapers, etc. distinguishes it from the others. The distribution of this generalized culture is still problematic.

The discovery in a Neolithic kitchen-midden at Dong-hoi, Annam, of a few crude unslipped painted pottery sherds among incised pottery with high foot and cord-marked pottery should be carefully noted. So far the excavator has only suggested the Aeneolithic Sicilian painted pottery as a parallel.

There seemed to be a break between the Neolithic and late Neolithic cultures in Indo-China. There appear not only the polished shouldered axe and the long straight-sided chisels, which are characteristic of this period, but also small implements of stone. The origin of these new forms is still uncertain; some ascribe them to imitation of imported metal prototypes, others to immigrant groups. But their almost exclusive occurrence in Greater Indo-China should be remembered in this connection.

Notwithstanding much archaeological exploration in Korea and Japan, no systematic study of the prehistoric cultures seems to have been attempted, therefore no general comparison with other areas can be made. The evidence of the pottery and stone remains appears to show that cultural streams from the north and from the south Far East had come together and mingled in these areas throughout the Neolithic. The most striking example is the occurrence of both the semilunar stone knife of the north and the polished shouldered axe of the south in the late Neolithic deposits in Japan. However, these are only hints of possible relations, which must be more carefully investigated.

As for the racial affinities of the carriers of the various Neolithic cultures, recent investigations show that the late Neolithic men in Japan resemble the modern Japanese sufficiently to warrant the use of the term "Proto-Japanese." But the problem of late Neolithic population in Japan is always confused with the Ainu question, and Japanese archaeologists have not yet been able to form any definite opinion. Generally, they admit some slight Ainu affinity.

In the case of Indo-China, the skeletal remains show that the bearers of the late Neolithic culture differ considerably from the present highly Mongoloid population and recall the physical type represented by the Miao-tse in Southwestern China and in Northern Indo-China.

The late Neolithic or Aeneolithic population of North China seems to diverge somewhat more from the modern North Chinese type than do those of later prehistoric times and to show resemblance in some features to the Tibetan B or Kham Tibetan type of Morant. This and the later

historical relation of Tibet with the Kansu area, from where most of the skeletal material came, ought to be a sufficient reminder to the archaeologists to look more closely into the prehistoric remains of this plateau region, which up to the present time has been regarded more as an archaeological barrier than a bridge between the north and south.

The two skeletons from the graves of the P'i-tzu-wo site in South Manchuria, though much later in time, resemble the late Neolithic men from Sha-kuo-tun and Yang Sha Tsun more closely than the modern Northern Chinese, and the modern Northern Chinese more closely than the modern Korean. This discovery is pregnant with meaning which can only be understood in the light of future investigation in this country.

When we turn to the metal culture, the situation in Indo-China is comparatively simple. An indigenous bronze culture seemingly started from a humble beginning, as testified by the Tonkin bronzes, and later developed into the elaborate Cambodian Bronze culture. No connection has yet been made with any outside group, and its distribution seems to extend into Southwestern China.

The condition in the Northern area as a whole, including Southern Siberia, Mongolia, Manchuria, North China, Korea, and Japan, is more complicated. According to some, the Bronze culture came after the Iron culture in South Siberia, Mongolia, and Manchuria; in South Siberia the Iron culture level is said to have rested on a sterile layer which separated it from the Palaeolithic level and contained no Bronze Age remains. Practically the same cultural sequence was found in Mongolia and Manchuria. But in the latter areas stone objects and datable Chinese bronze coins of the fifth and the fourth century B.C. were found mixed with iron objects. A similar condition has been claimed for the Altaic region in the west and Japan in the east, but without as much evidence. The support which has been most frequently resorted to is the presence of tumuli and collective burials containing iron in all these areas. So if these claims have really any foundation in fact, iron must have been in use in South Siberia and adjacent country at the end of the first millennium B.C. when according to some authority, bronze first appeared in the Minussinsk region.

In China the historical bronze vases dated back to at least the eighteenth century B.C., and the use of bronze for the manufacturing of arms lasted down to the first century of the Christian era. The relation of this Bronze culture to the late Neolithic culture in North China has not yet been satisfactorily worked out. But the similarity in form between the bronze li and hsien and the late Neolithic pottery li and hsien is so close that the imitation of the pottery forms in bronze can hardly be doubted. The same thing applies to the long jade knives with a series of perfora-

tions and the late Neolithic stone knives of similar form. However, this admission of imitation does not settle the problem of the origin of the Chinese Bronze culture. Of course it may be pointed out that the late Neolithic culture, which has been generally dated to the first half of the third millennium B.C. is separated from the full development of the Bronze culture by 500 years, a long enough duration for the evolution of even the most specialized forms. But so far no primitive bronze forms have yet been found in China that could be regarded as ancestral to the historical bronze vases. Thus the apparently abrupt appearance of a full-fledged Bronze culture remains to be explained.

Relation with Bronze cultures of West Asia and East Europe has been variously suggested. Perhaps the most convincing is based on the similarity of decorative motives. This only shows that the Chinese Bronze culture had received influence from the outside, but does not explain its origin. Another suggestion of similar nature is the derivation of the late Chou knife-money, ming-tao, from the small Minussinsk bronze knives. Many other examples can be cited, but none really throw any light on the point under discussion.

According to a reliable Chinese literary document, iron was used to manufacture big caldrons at as early a date as the first years of the seventh century B.C. There is historical evidence that in later times the use of this metal was learned from the Northern tribes; and that it was during the Tsin dynasty (ca. 220 B.C.) and due to the border warfare that iron arms came into fashion. There is no similar record for the introduction of iron at an earlier period but there can be little doubt that it had come from the same direction.

The later development of the metal culture belongs to the historical epoch, at least in China, so is beyond the scope of this paper. But even within the limits set for this paper the material for study is so abundant and at the same time so very scattered that only some of the most important hints and the widest gaps in the material are pointed out and discussed. We have to leave out of consideration not only the very interesting problems of the cultural relations between the Far East and the Near East and Europe, but also the discussion of some of the most important individual cultural traits.[3]

46 CARVER STREET
CAMBRIDGE, MASSACHUSETTS

[3] The following authors have been frequently referred to, but all direct references to their works are omitted from the text: W. J. L. Abbot, J. G. Andersson, T. J. Arne, J. Baye, Boule, H. Breuil, M. Coloni, Licent and Teilhard, H. Mansuy, E. Patte, H. W. Seton-Karr, K. Hamada, L. A. Cmmiade, N. C. Nelson, G. v. Merhart, R. A. Smith, H. Schmidt, R. Torii, and many others.

THE KINSHIP NOMENCLATURE OF THE PUEBLO INDIANS

By ELSIE CLEWS PARSONS

TO THE standing controversy about the influence of sociological factors as against the influence of linguistic factors in kinship nomenclature, Dr. Lowie has recently made a contribution based on an analysis of Hopi nomenclature.[1] The Hopi are a Shoshonean-speaking people, but they have a highly developed system of clanship which is not a character of most Shoshonean tribes. Does clanship find expression in the Hopi nomenclature? Do certain nomenclature traits of other Shoshoneans persist among the Hopi—reciprocity and the differentiation of maternal and paternal grandparents? Lowie finds that reciprocal terms do not occur, that there is no bifurcation in the grandparent generation, that traits which may safely be imputed to clanship do occur—classification of father's brother and father, mother's sister and mother, child and parallel sibling's child, with these terms extended to clansfolk and with a tendency to override the generation principle; e.g., the father's sister's female descendants through females are all called by the same term as the father's sister, or again the father's sister's husband is called grandfather, his son (the speaker's father's sister's son) being called father; and he concludes

> that linguistic conservatism has been of slight importance in the history of the present Hopi nomenclature and that the clan concept has exerted a deep influence upon it.

Only incidentally in this discussion does Dr. Lowie refer to the kinship nomenclatures of the other Pueblo. A comparative survey of the Pueblo will be found I think to have a bearing upon Lowie's Hopi findings and upon the sociological-linguistic controversy at large. The tables of terms will be of practical value to students.

Let us recall briefly the social organization of the Pueblo in so far as it may be supposed to touch the various categories of kinship nomenclature, organization according to clan, to moiety, to sex, to marriage, and to seniority. All the tribes, except the Tanoan-speaking,[2] are characterized by a clanship system which, with some exceptions among the Northern Tewa, is matrilineal. In all, however, the father's clan has significance;[3] you are said to be the child of your father's clan. In the ceremonialism of the personal life definite functions attach to the father's people, first to the paternal

[1] Robert H. Lowie, Hopi Kinship, AMNH-AP 30, pt. 7, 1929.

[2] Of Isleta, Sandia, Picuris, and Taos.

[3] As among the matrilineal Crow and Hidatsa (R. H. Lowie, Notes on the Social Organization and Customs of the Mandan, Hidatsa, and Crow Indians, AMNH-AP 21: 89–90, 1917).

relatives nearer in blood, then, in default, to the remoter relatives of the paternal clan. This ceremonial connection with the paternal clan appears most distinctively in the Hopi rituals of naming and of marriage, and in all the tribes in funeral observances. As far as I know, in all the tribes the father's sister or kinswoman invariably washes the corpse. The rite of head-washing, which is always associated with initiation into a new group and often with other ceremonial performance, is an important function of the paternal kinswomen. "Aunts," i.e., paternal kinswomen, are assigned special rôles in "dances," more particularly war dances. At Zuñi, ceremonial offices which are associated with clanship are filled not only by clan members but by children of the clan; in fact in some offices there is a regular alternation between clansmen and children of the clan; e.g., one year the office of New fire maker is filled by a Badger, fire being associated with the Badger clan, and the next year by a child of Badger. The important offices of the ritual clowns (Koyemshi) are always filled by a child of the clan. Among the Hopi, too, children of the clan may substitute in office for clansmen. In general it may be said that the sense of clan solidarity, as it is expressed in ceremonial office holding or in ritual as well as in economic activities, is strongest among the Hopi and weakest in the Rio Grande towns, appearing as a marginal trait among the Northern Keres and Tewa.[4]

Among the Tewa the patrilineal moiety is the paramount principle of social organization. If anything it is endogamous; if a woman does belong to the opposite moiety she frequently joins her husband's moiety by an adoption ceremony. But it is in the ceremonial life rather than in marriage that the moiety principle is expressed. There is a double kiva system for Winter People and Summer People, and a double Town chieftaincy. The double kiva system with its effects on dance organization and on the clown societies occurs at Jemez and among the Eastern Keres who have, however, a single Town chieftaincy. Among Tanoans there is marked moiety expression in ceremonial organization. In the West there is but a trace of moiety.

Distinctions of sex are marked in the Pueblo culture, in dress, in occupations, and in the ceremonial life. The distinctions are a matter of division of functions between the sexes rather than of subordination of one sex to the other. The house and all the activities which center in the house appertain to women, the outside or public life to men. Even when women share in the public ceremonial life, their rôles follow lines of domestic concern, e.g., providing food for the fetiches, whether mask or corn ear or animal image, and for the ritual impersonators, the priests, the doctors. Speech is somewhat differentiated according to sex—the word for thanks, which is

[4] See E. C. Parsons, Tewa Kin, Clan and Moiety, AA, n.s., 26: 333–339, 1924.

in constant use, is different for male and female in most, if not all, the languages; exclamations also vary with sex, and probably adjectives; but as far as I know, in Zuñi, Keresan, and Hopi, gender does not appear in the grammar, except in the matter of suffixes of personal names, the sex of which otherwise is also usually distinguishable.

Marriage throughout the tribes with clans, the Tewa excepted, is exogamous, and taboo in the father's clan as well as in the mother's. However, there are more cases of marriage with a child of the clan than with a clan member, and marriage into your father's clan passes comparatively unstigmatized. With a few ambiguous exceptions to be referred to later, there appear to be no preferred marriages. Marriage is monogamous, and in the West more or less brittle. In the East, Catholicism has had some effect in precluding divorce, but the effect is probably more apparent than real. For example, at Laguna and at Jemez partners are changed in youth much as at Zuñi, only the mating before the church marriage is surreptitious and without obligation on the part of the man to the girl's household. At Zuñi and among the Hopi, houses are owned by the women and descend from generation to generation of women, but in the East the men own houses as well as the women. A son as well as a daughter may inherit a house, and a man may build or buy a house not merely for his wife, but for himself. In the more northern towns, in fact, the men are primarily the house owners. There is an interesting coincidence in the distribution of house-owning and of clanship in passing from West to East, from the unquestioned female proprietorship of the Hopi and their highly developed clanship system to male proprietorship of houses at clanless Taos.

In house inheritance in both West and East the principle of seniority figures to a certain extent, likewise in inheritance of ceremonial office, in so far as the hereditary principle is expressed as it is among the Hopi, where other conditions being favorable the oldest son of the oldest sister succeeds to chieftaincy. In daily life, however, the principle of seniority within the same generation figures but little; no more, I incline to think, than in the family of the white American. In Zuñi folk tale and ceremonial organization there is an exception. Here the older brother-younger brother pattern is conspicuous. The parallel tale told in Keresan is in this respect told quite differently.

On the other hand between generations throughout the tribes the principle of seniority is prominent. It appears in marriage choices, and the older people have much more authority and control than their juniors both in the house and in sacerdotal organization.

To sum up, in all the foregoing particulars, not to speak of others, the

social organization of the Pueblo Indian peoples is fairly homogeneous. The chief differences are between the Western and the Eastern Pueblo in their practice of householding, and in their attitudes toward moiety and clan.

Let us turn now to table 1[5] and its analysis.

Forking and Merging

Throughout the tribes, direct and collateral kin are classified together, and maternal and paternal lines are distinguished; to use Lowie's term, we have the forked merging type of classification which is associated with clanship. But there are notable variations, or exceptions, both in the merging and in the forking processes. At Zuñi, Isleta (possibly Taos), and among the Tewa, mother's sister has a distinctive term, although at Zuñi (Isleta, unknown) the term mother is also used, and at Hano a man will call his wife's mother's sister, mother. At Hano there is a distinctive, although obsolete, term for father's brother, and at Santo Domingo, also at Zuñi,[6] instances have been recorded of distinguishing between father and father's brother. Among the Northern Tewa, at Jemez, and at Taos there is no distinctive term for father's brother, but in practice the term for father is not applied, a general term for senior kinsman, paternal or maternal, is used.

Other exceptions to the distinction between maternal and paternal kin appear, notably in the grandparent generation. Among the Hopi, Keres, Northern Tewa (Nambé excepted), and at Taos, there is no distinction between maternal and paternal grandparents; at Zuñi, at Isleta, and at Hano, maternal and paternal grandmothers are distinguished, but not grandfathers. (At Hano the paternal grandmother may also be called by the term for maternal grandmother.) In all the tribes, then, mother's father and father's father have the same term. There are also some slight variations in the parent or aunt-uncle generation. For father's sister there is among Hopi and Tewa, and at Zuñi, Isleta, and Jemez, a distinctive term; at Laguna there is an age-class term, which is used, however, in reference very dis-

[5] These data I have collected over a term of years, excepting the terms for the western Tewa or Hano, which were recorded by Barbara Freire-Marecco (Tewa Kinship Terms from the Pueblo of Hano, Arizona, AA, n.s., 16: 269–287, 1914); and the terms for Cochiti recorded by Esther Schiff Goldfrank (Social and Ceremonial Organization of Cochiti, AAA-M 33, 1927). Available published records are: R. H. Lowie, Notes on Hopi Clans, and Hopi Kinship, AMNH-AP 30, pts. 6 and 7, 1929; A. L. Kroeber, Zuñi Kin and Clan, AMNH-AP 18, pt. 2, 1917; E. C. Parsons, Laguna Genealogies, AMNH-AP 19, pt. 5, 1923; E. C. Parsons, Further Notes on Isleta, AA, n.s., 23: 149–153, 1921; E. C. Parsons, Pueblo of Jemez, Publ. Department of Archaeology, Phillips Academy, Andover, 1925; J. P. Harrington, Tewa Relationship Terms, AA, n.s., 14: 472–498, 1912; E. C. Parsons, Social Organization of the Tewa in New Mexico, AAA-M 36, 1929.

[6] Kroeber, 60.

	Hopi	Zuñi	Acoma	Laguna	San
Mother Mother's sister	ingŏ̄ (L.,' iña'ŏ') (yaya, voc.) yayahoya (little)	tsiya also hashi, m.'s older s. tsilo, m.'s younger s.	naíya (also father's s.)	naíya (yaya, child's voc.) voc., father's s.	s'ánaiya (yaya, w.'s voc.) also fa
Reciprocal	itii (child) L., tsi'i-māna (daughter)	k'yatsekyi (girl) aktsekyi (boy)	s^{a}amaak (my girl) s^{a}amuiti (my boy)	s'á'yach (my child) s'amaák' (my girl) s'amuiti (my boy) shachi	s'áwishe, s'i (my child) s'amak s'amuit', s'a
Stepmother		iniha (also father's brother's wife; wife of cousin of older generation)	naíya	naíya s'anaiyadjanishe, shgunayu, or naíya	
Father Father's brother	inaŭ (naŭ, tata, voc.)	tachu	naishdía	naishdyí'ya shanadyiu (obs., ceremonial)	s'ánaish'yĕ umŭ', voc., woman's vo
Reciprocal	itii	cha'le (child) k'yatsekyi aktsekyi	s^{a}amaak s^{a}amuiti	waashch'e (child of clan, not used) s'amaák' s'amuiti shachi (obs., cer.)	s'áwishe s'amak s'amuit'
Mother's mother	isuu (suu, su'su) (L., iso'ŏ)	hota	dyiau'', w. sp. papa, m. sp.	gyiau'', w. sp. pá'pa, m. sp.	s'a't'aó (s'á (t'aó, t'aaó, s'ápapa (pa
Reciprocal	imŏyi	hota (grandd.) nana (grands.)	dyiau'' (grandd.) papa (grands.)	gyiau''(grandd.) pá'pa (grands.)	s'át'aó (gra (t'aó, voc.) s'ápapa (gr (papa)
Father's mother	isuu (suu, su'su)	wowa	dyiau'', w. sp. papa, m. sp.	gyiau'', w. sp. pá'pa, m. sp.	s'át'aó (t'aó s'ápapa (pa
Reciprocal	imŏyi	wowa nana	dyiau'' (grandd.) papa (grands.)	gyiau'' (grandd.) pá'pa (grands.)	s'át'aó (t'aó s'ápapa (pa
Mother's father	ikwaa (papa, child's voc.)	nana	papa, w. sp. nana, m. sp.	pá'pa, w. sp. nana, m. sp.	s'ápapa (pa s'ámumŭ (s' (mumŭ, voc
Reciprocal	imŏyi	hota (grandd.) nana (grands.)	papa (grandd.) nana (grands.)	pá'pa(grandd.) nana (grands.)	s'ápapa (pa s'ámumŭ (s
Father's father	ikwaa (papa)	nana	papa, w. sp. nana, m. sp.	pá'pa, w. sp. nana, m. sp.	s'ápapa (pa s'amumŭ (s
Reciprocal	imŏyi	hota (grandd.) nana (grands.)	papa (grandd.) nana (grands.)	pá'pa (grandd.) nana (grands.)	s'ápapa (pa s'amumŭ (s
Mother's mother's mother	kyaata (great grandmother)	Compound descriptive term	naíya		Grandpare
Reciprocal		Compound descriptive term	s^{a}amaak s^{a}amuiti		Grandpare
Mother's mother's father	vavaama (great grandfather)	Compound descriptive term	naishdía (father's father's father)		Grandpare
Reciprocal		Compound descriptive term	s^{a}amaak s^{a}amuiti		Grandpare
Older sister, w. sp.	ikŏ̄ka (L., iĕqŏ̄qĕ)	kyawu	shaau' (gaau', voc.)	gauau' (au')	shkashgau sáshi, saásh
Younger sister, w. sp.	itúrpku (L., itŏ'pquĕ)	hani	shaau' (gaau', voc.)	gauau' (au')	shkashgau sáshi; saásh
Older sister, m. sp.	ikŏ̄ka	kyawu	s^{a}akuich (chichi, voc.)	ákwi	s'ameme (meme, voc
Younger sister, m. sp.	isiwa	ikyina	s^{a}akuich (chichi, voc.)	ákwi	s'ameme (meme, voc
Older brother, w. sp.	ipapa	papa	s^{a}auwach (chichi, voc.)	sh'gauwa (auwa)	s'ameme (meme, voc
Younger brother, w. sp.	itúrpku	hani	s^{a}auwach (chichi, voc.)	sh'gauwa (auwa)	s'ameme (meme, voc

TABLE 1. PUEBLO KINSHIP TERMS.*

Keres			Isleta	Hano	
San Felipe	Santo Domingo	Cochiti			
s'ánaiya (yaya, w.'s voc.; ya, m.'s voc.) also father's s.	s'ánaiya (iyá, voc.) also father's s.	yaya	inké (nana, voc.)	jija[3]	jija[3]
			inkechei, w. sp. (ke'chu, voc.)	ka'je (older s.) ko'o (younger s.)	kŏ'ŏ
s'áwishe, s'áwashe (my child) s'amak s'amuit', s'amuiñt'	s'awishe s'ámak s'awishe	samak (obs.) sawushe	iñiuwe'i (imPyuwe'i), w. inuwe'i, m. inŏawiwe'i (recip. to mother's s.)	'e (child) ko'o''e ka'je'e	'e (child) kŏ'ŏ''e
		yaya			kwa, pre step-rela
s'ánaish'yĕ(s'ánaish') umŭ', voc., tata, child's or woman's voc.	s'anashd'[a] (omŭ, man's voc.) (tata, woman's voc.) tata, father's brother	umu, m. sp. wawa (one case) sanasht'[ua] } w. sp. dada nyenye (one case)	inkai (nkai) (tata, voc.)	tada also father's brother tutu'uŋ (obs.)	tara; tat brother, or any se tu'inu
s'áwishe s'amak s'amuit'	s'ámak s'awishe	sawushe	iñiuwe'i, w. inuwe'i, m.	'e	'e tu'e
s'a't'aó (s'át'aaú), w. sp. (t'aó, t'aaú, voc.) s'ápapa (papa, voc.), m. sp.	s'át'aó, w. sp. s'ápapa, m. sp.	da'ó, w. sp. sababa, m. sp.	chi'i	saja	sa[m]ja
s'át'aó (grandd.) (t'aó, voc.) s'ápapa (grands.) (papa)	s'át'aó (grandd.) s'ápapa (grands.)	da'ó (grandd.) sababa (grands.)	maku	saja'e	sa[m]ja'e
s'át'aó (t'aó), w. sp. s'ápapa (papa), m. sp.	s'át'aó, w. sp. s'ápapa, m. sp.	da'ó, w. sp. sababa, m. sp.	inlure (inlurei) (luru, voc.)	kuku (voc. also saja)	sa[m]ja
s'át'aó (t'aó) (grandd.) s'ápapa (papa) (grands.)	s'át'aó (grandd.) s'ápapa (grands.)	da'ó (grandd.) sababa (grands.)	maku	ku'e	sa[m]ja'e
s'ápapa (papa), w. sp. s'ámumŭ (s'aúmuŭm), m.sp. (mumŭ, voc.)	s'ápapa, w. sp. s'aumumŭ, m. sp.	sababa, w. sp. mumu, m. sp.	inte'i (teé, voc.)	t'ete	t'ete
s'ápapa (papa) (grandd.) s'ámumŭ (mumŭ) (grands.)	s'ápapa (grandd.) s'aumumŭ (grands.)	sababa (grandd.) mumu (grands.)	maku	t'ete'e	t'ete'e
s'ápapa (papa), w. sp. s'amumŭ (mumŭ), m. sp.	s'ápapa, w. sp. s'aumumŭ, m. sp.	sababa, w. sp. mumu, m. sp.	inte'i (teé, voc.)	t'ete	t'ete
s'ápapa (papa), w. sp. s'amumŭ (mumŭ), m. sp.	s'ápapa (grandd.) s'aumumŭ (grands.)	sababa (grandd.) mumu (grands.)	maku	t'ete'e	t'ete'e
Grandparent terms		da'ó, w. sp. sababa, m. sp.		papa	papasa[m] (also for grandmo
Grandparent reciprocals		da'ó (great grandd.) sababa (great grands.)		papa'e	papasa[m] (also for
Grandparent terms		sababa, w. sp. mumu, m. sp.		papa also mother's father's father; father's father's mother	papa, pa (also for grandfat
Grandparent reciprocals		sababa (great grandd.) mumu (great grands.)		papa'e	papa'e; (also for
shkashgau sóshi, saúshi	s'at'aóna (t'aoná, voc.)	táo; sooshe; da'ona	intute'i (tutu, voc.)	kaka ka'an, obs.	pa[m]re
shkashgau sóshi; saúshi	s'at'aóna (t'aoná, voc.)	táo; sooshe; da'ona	imp'eché (imbachuwe'i) (p'eechu (bachu), voc.	tije	tíu
s'ameme (meme, voc.)	s'ameme (meme, voc.)	meme	intute'i (tutu, voc.)	kaka (ka'an)	pa[m]re
s'ameme (meme, voc.)	s'ameme (meme, voc.)	meme	inkwimuwe'i (inkwĕmuwei) (kwimui, voc.)	tije	ti'u
s'ameme (meme, voc.)	s'ameme (meme, voc.)	meme	impape'i (papa, voc.)	pip'i	pa[m]re
s'ameme (meme, voc.)	s'ameme (meme, voc.)	meme	imp'aiyuwe'i (p'aiyu, paiyó, voc.)	tije	ti'u

Tewa			Jemez	Taos
	Northern Tewa[4]			
	jija[3]	dyiya, jiya, djiya	tse'e (des.) iya (voc.)	añk'ána (des.) laá (voc.)
.) er s.)	kŭ'ŏ	kaiyé, ka'ye (older s.) ko'o (younger s.)		(?) ank'aina also añiamena (des.): fame (voc.)
	'e (child) kŭ'ŏ' 'e		ki (child) achi (boy)	anowaí, son (des., voc.) añpiukai, daughter (piu, voc.)
	kwa, prefix to denote step-relationship		wigi, veha, prefix to denote step-relationship	
.)	tara; tata; to father's brother, elder brother, or any senior kinsman tu'inu	tara, ta t'ono, tunu	tŏ̄ witata (any kinsman, mat. or pat., older or younger)	añt'oména (des.) } father t'it'á (voc.) } añtolona (des.) } uncle tolo (voc.) }
	'e tu'e		ki achi, male kishyus, youth	anowaí, son (des., voc.) añpiukai, daughter (piu, voc.)
	sa[m]ja	saiya (S. J.) jiya kwiyo (S.C.)	olŏ̄	añtítona (des.) lito (voc.)
	sa[m]ja'e		meku	añmák'ŏna (des.) mak'u (voc.)
ja)	sa[m]ja	saiya (S.J.) jiya kwiyo (S.C.)	dydyŏ̄	añ ítona (des.) lito (voc.)
	sa[m]ja'e		meku	añmák'ŏna (des.) mak'u (voc.)
	t'ete	t'et'e (S.J.) tasendo (S.C.)	toholō tolō, child's voc. vela., m. sp.	añtalulina (des.) taluli (voc.)
	t'ete'e		meku achi, male	añmák'ŏna (des.) mak'u (voc.)
	t'ete	t'et'e (S.J.) tasendo (S.C.)	toholŏ̄	añtalulina (des.) taluli (voc.)
	t'ete'e		meku	añmák'ŏna (des.) mak'u (voc.)
	papasa[m]ja (also for other great grandmothers)	papa saiya (S.J.) saiyá (S.C.)	wigi olŏ̄ (also for other great grandmothers)	talulihea
	papasa[m]ja'e (also for other great grandchildren)		wigi meku	
's father's her's other	papa, papat'ete (also for other great grandfathers)	papat'et'e (S.J.) t'et'e (S.C.)	wigi toholŏ̄	
	papa'e; papat'ete'e (also for other great grandchildren)			
	pa[m]re		ko'ó	añt'út'ina (des.) t'úto (voc.)
	tíu		p'aé	añpafuna (des.) ope' (voc.)
	pa[m]re		ko'ó	añt'út'ina (des.) t'úto (voc.)
	ti'u		p'aé	añpafuna (des.) ope' (voc.)
	pa[m]re		p'apŏ̄	añpápana (des.) papa (voc.)
	ti'u		p'etŏ̄	añpáina (des.) úso (voc.)

Younger brother, w. sp.	itúrpku	hani	s^{t}auwack (chichi, voc.)	sh'gauwa (auwa)	s'ameme (meme, voc.)
Older brother, m. sp.	ipapa	papa	s^{t}atiuma (tĭuma, voc.)	t^{y}áme umũ'	s'átyumũ (tyumũ, voc.)
Younger brother, m. sp.	itúrpku	suwe	s^{t}atiuma (tĭuma, voc.)	t^{y}áme (umũ)	s'átyumũ (tyumũ, voc.)
Mother's brother, w. sp.	taa (L., ítahá)	kyakya		s'amuiti	s'ányenye (nyenye, voc.)
Reciprocal	itiwaiya (L., itĭ'waaya)	kyase		naĭya	s'ányenye (nyenye, voc.)
Mother's brother, m. sp.	taa	kyakya	s^{t}anawe (anawe, voc.)	anawe	s'anawá
Reciprocal	itiwaiya	kyase	s^{t}anawe (anawe, voc.)	anawe	s'anawá s'ahachtstyáme (collective)
Mother's mother's brother	papaya			sh'gauwa, w. sp. umũ', m. sp.	
Reciprocal	kakaoiya tũrpkuya			ákwi, w. umũ', m.	
Father's sister	íkyaa L., ik'a'á; iso'ó, (eldest sister)	kuku	naĭya	k'áya (naĭya, more usual voc.)	s'ánaiya
Reciprocal	itíl L., imõyi	eye, w. tale, m.	s^{t}amaak s^{t}amuiti	iyach {s'amaák / s'amuiti}	s'awishe (s'awashe) s'akoyatyáme (collective)
Parallel cousins	Sister-brother terms	Sister-brother terms	Sister-brother terms	Sister-brother terms	Sister-brother terms
Mother's brother's daughter, w. sp.	ítii (?) L., imõ'yi	eye	Sister-brother terms	gyiau''	Sister-brother terms
Father's sister's daughter, w. sp.	íkyaa	kuku		gyiau'' (s'ak'áya, des.)	
Mother's brother's son, m. sp.	ímõmõ (?) L., íti^{2}i	aktsekyi		s'amuiti	
Father's sister's son, m. sp.	ínaa (inaáhoya)	tachu		naishdyi^ya	
Mother's brother's son, w. sp.	imõyi	tale		pá'pa	
Father's sister's daughter, m. sp.	íkyaa	kuku		pá'pa (s'ak'áya, des.)	
Father's sister's son, w. sp.	ínaá (inaáhoya)	tachu		naishdyi^ya	
Mother's brother's daughter, m. sp.	ítii	k'yatsekyi		s'amaák[4]	
Male connection by marriage; kin of wife	mõũnaõ L., imõ'õnaña'õ	talakyi	wati	wati	wati
Female connection by marriage; kin of of husband	mõwi L., imõ'uwi	ulani	piye	piye	bíya
Other affinity terms					
Wife	inõma				s'auk'o
Husband	íkonya (L., qúnya)				s'atroshtse (s'ad^{z}esh^{z}e)

* In a large number of instances diacritical marks have been omitted, due to the limitation
[1] L. = Lowie.
[2] } = y.
[3] } Mother's sister's son, w. sp.—mæmæ, if senior, ko'o'e, if junior; mother's sister's daughte
[4] First column, Harrington; second, Parsons.

	s'ameme (meme, voc.)	s'ameme (meme, voc.)	meme	imp'aiyuwe'i (p'aiyu, paiyó, voc.)	tije	ti'u
	s'átyumũ (tyumũ, voc.)	s'atyumi (tyumi, voc.)	chuchumi sadᴶumishe	impape'i (papa, voc.)	pip'i	pa^{m}re
	s'átyumũ (tyumũ, voc.)	s'atyumi (tyumi, voc.)	chuchumi sadᴶumishe	imp'aiyuwe'i (p'aiyu, voc.)	tije	ti'u
	s'ányenye (nyenye, voc.)	s'anyenye	nyenye also nanashtᵐᵃʰ, dada	inmeme'i (memé, voc.) also father's brother	mæmæ	t'u^{u}nu
	s'ányenye (nyenye, voc.)	s'anyenye	nyenye sawushe	inch'unuwe'i (ch'unu, voc.)	mæmæ'e	tu'e
	s'anawá	s'ánawa	umu wawa, awa anawa, anawashe	inmeme'i (memé, voc.) also father's brother	mæmæ	tu^{m}nu
	s'anawá s'ahachtstyáme (collective)	s'ánawa	sawushe wawa, awa anawa, anawashe	inch'unuwe'i (ch'unu, voc.)	mæmæ'e	tu^{m}nu
w. sp.).			sababa, w. sp.		p'ep'e; rarely papa	tu^{m}nu (also other grand-uncles)
			sababa		p'epe'e (pe'e'e, obs.) papa'e	tu'e
re usual	s'ánsiya	s'ákwishe; s'ákuya	yaya	inkiwe'i (kiwuú; ky'uú, voc.) also mother's sister (aiya, aunt)	ki'^{ii}u	kõ'õ
maák muiti	s'awishe (s'awashe) s'akoyatyáme (collective)		sawushe	inch'avewe'i, w. int'uuwe'i, m. chabe, junior kins-woman, w. sp.	nabi'e kwijo (my lady child) nabi'e sen (my man child)	kõ'õ'e
ber	Sister-brother terms		Sister-brother terms		Sister-brother terms[3]	
			táo; soosbe		nabi'e kwijo	
ics.)			táo; soosbe		ki'^{ii}u	
			wawa chuchumi sanawa sadᴶumishe		'e	
a			wawa chuchumi sanawa sadᴶumishe		tada	
			meme nyenye		nabi'e sen	
les.)			meme nyenye		ki'^{ii}u	
a			meme		tada	
			meme		'e	
	wati	wat'i	wat'ⁱ	insõõiwe'i	sojingi	soningi
	biya	biya	bi'hia	inyewe'i	sa'i	sa'e
				int'arawei, parent-in-law, child-in-law		
	s'auk'o	s'auk^{m}	sok'o	inõowe'i (my old woman)	nabi son (my mate), ja'a (obs.)	
	s'atroshtse (s'adᴶesbᴶe)	s'ádrishᴶe	satrushe	insõ'awe'i	son	

Sister-brother terms

Female cousin (?) s'anye...
Male cousin (?) ana...

Sister-brother terms, or Sp. prima, primo

ko'o, female cousin; mæ'mæ, male cousin. For second, third, etc., cousins, brother-sister terms

been omitted, due to the limitations of the printers, and the reader with linguistic interest must be referred to the original publication of the terms in quest

e, if junior; mother's sister's daughter, w. sp.—ko'o, if senior, ko'o'e, if junior; mother's sister's son, m. sp.—mæmæ, if senior, mæmæ'e, if junior; mother's sister's

tl'u		p'etš	añpáina (des.) úso (voc.)
pa^{m}re		p'apš	añpápana (des.) papa (voc.)
tl'u		p'etš	añpáina (des.) úso (voc.)
t'u^{m}nu	meme	tomu	ñmimina (des.) mimi (voc.)
tu'e			añk'iluna (des.) kilu (voc.)
tu^{m}nu	meme	tomu	ñmimina (des.) mimi (voc.)
tu'^{m}nu		tomu	añkiluna (des.) kilu (voc.)
tu'^{m}nu (also other grand-uncles)		tomu	
tu'e			
kŏ'ŏ	ki'ĭ	chi'ĭ	añiámēna (des.) ĭame' (voc.)
kŏ'ŏ'e			añkiluna (des.) kilu (voc.)
		Sister-brother terms	
soningi		pengshyu	añtaana (des.) taa (voc.)
sa'e	sa'ĭ (S.J.) sa'e (S.C.)	pengya	antsenena (des.) sĕaye (voc.)
	yakwiyo, mother-in-law; yasendo, father-in-law; ya'a, sister or brother of spouse; t'at'a, husband of ki'ĭ; nana, wife of meme		
		ho'é	ñlitona
		peé	anluliina

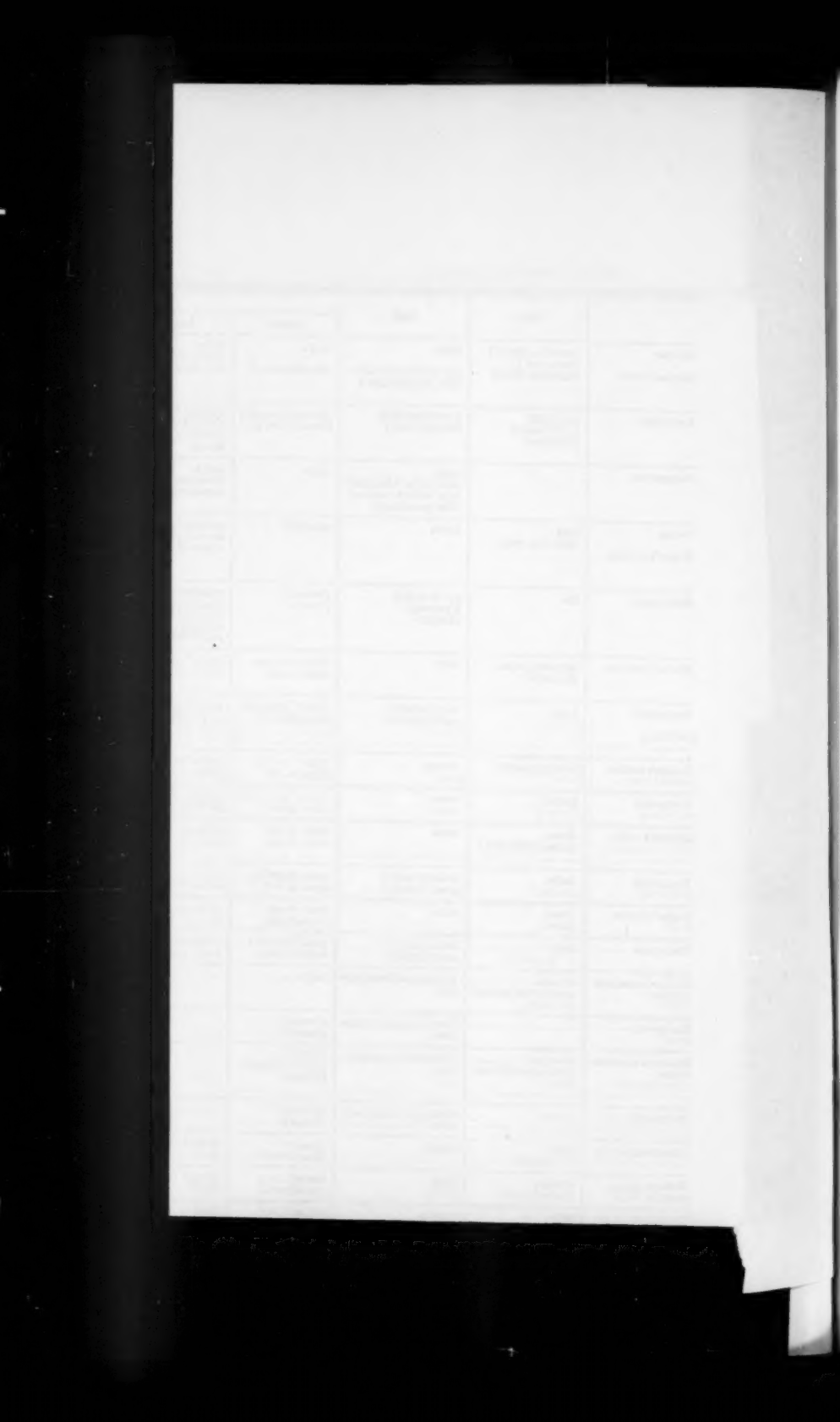
kŏ'ŏ, female cousin; me?me, male cousin. For second, third, etc., cousins, brother-sister terms.

Brother-sister terms, voc. Uncle-aunt terms, des.

Female cousin senior to speaker, añiámēna (des.), ĭame' (voc.); Male cousin senior to speaker, antolona (des.) tolo (voc.); Cousin junior to speaker, kilu

the terms in question.

r; mother's sister's daughter, m. sp.—ko'o, if senior, mæmæ'e, if junior.



tinctively; but in the other Keresan towns there is no distinctive term for the father's sister. She is classified with mother and mother's sister. Consistently, in these towns cross-cousins are said to be called like parallel cousins, i.e., by the sister-brother terms. At Taos there is the same term for father's sister and for mother's sister, although the aunt term appears to be applied more distinctively to father's sister. All the foregoing discriminations are classified in tables 2 and 3.

TABLE 2. DIFFERENTIATION IN FORKING

Maternal and paternal grandmother		*Maternal and paternal uncle*		*Maternal and paternal aunt*	
Distinguished	Not distinguished	Distinguished	Not distinguished	Distinguished	Not distinguished
Zuñi	Hopi	Hopi	Cochiti (partially, one case)	Hopi	Keres
Isleta	Keres	Zuñi	Taos (partially)	Zuñi	Laguna and Santo Domingo (partially excepted)
Hano	Northern Tewa	Keres		Isleta	Taos (partially)
Jemez	Taos	Isleta		Tewa	
		Hano		Jemez	
		Northern Tewa (partially)		Laguna and Santo Domingo (partially)	
		Jemez			
		Taos (partially)			

TABLE 3. DIFFERENTIATION IN MERGING

Mother and mother's sister		*Father and father's brother*	
Same term	Different term	Same term	Different term
Hopi, Keres, Zuñi (partially), Jemez	Isleta, Tewa, Zuñi, (partially), Taos (partially)	Hopi, Zuñi, Keres, Isleta, Hano	Northern Tewa, Hano (obs.), Cochiti (partially), Jemez, Taos

On the whole, with some striking exceptions, the expressions of both forking and merging principles correspond fairly well in degree to the varying evaluation of clanship in the different tribes, from its peak in Tusayan to its vanishing point among Tanoans. The exceptions are a distinctive term for mother's sister at Zuñi, the lack of a distinctive term for father's sister among the Eastern Keres, the lack of distinctive terms among the

highly beclanned Hopi for maternal and paternal grandmother,[7] and the presence of such terms at Jemez where clanship is of comparatively little importance, and where, it should also be noted, the surrounding towns do not apply the forking principle to grandmothers.

Moiety

We noted that in some cases clanship is patrilineal among the Northern Tewa. Their obscurely mixed system of clanship I put down to a clash between their pronounced patrilineal moiety and the matrilineal clanship they have borrowed from the Keres.

As well as I can interpret the very confused and none too ample data, the existence of the patrilineal moiety among the Tewa has had no direct effect upon their kinship nomenclature.

Sex

There are some marked variations in expressing the category of sex. The sex of the person spoken to or of is not expressed in any of the reciprocal terms of the Tewa, since these sexless reciprocals are formed by the suffix 'e, a diminutive. In the other pueblos the sex of the person spoken to is expressed or considered in all cases except in the terms for offspring, for grandchildren, in some reciprocals to mother's brother, and in certain terms for younger sister or brother. (See table 4.) Throughout, Isleta and Taos excepted, the term "child" is used instead of "daughter" or "son." Since among the Keres, the father's sister uses the term for "child," she, too, of course fails to distinguish between niece and nephew. Elsewhere she does distinguish them with separate terms. Father's sister and parents use the term "child," but at Zuñi and among the Keres of Acoma, Laguna, and San Felipe they also use the terms "my girl" and "my boy," and thus introduce the sex distinction. At Santo Domingo and Cochiti "my girl" is used, but not "my boy." On the other hand, at Jemez the terms for boy or youth are used, not those for girl or maiden. The Hopi, the peoples of Isleta, Jemez, and Taos have but one term for granddaughter or grandson. At Zuñi, Isleta, and Taos the mother's brother addresses both niece and nephew by the same term. Among the Hopi and at Zuñi, a female calls both younger sister and younger brother by the same term; at Hano, both female and male have an identical term for their junior sister or brother, among Northern Tewa both female and male have an identical term for senior sister or brother.

[7] As Lowie points out, this lack of bifurcation is the more singular as distinctive terms for a maternal and paternal grandmother is a trait of Shoshonean nomenclature. (Hopi Kinship, 379.)

Among Northern Tewa neither the sex of the person addressed nor of the speaker finds expression in the sister-brother terms.

TABLE 4. SEX

Sex of person addressed disregarded	*Sex of speaker expressed*	*Opposition between sexes expressed*
General, excepting Isleta and Taos, in daughter son terms; Tewa, in reciprocals to juniors; Hopi, Jemez, Tanoans, in grand-d., grand-s. terms; Zuñi, Isleta, Taos, in niece, nephew terms; Hano, in junior sister, brother terms; Northern Tewa, in sister, brother terms	Eastern Keres, in voc. for father; Cochiti, in voc. and des. for father;[8] Keres, in mother's brother term, in brother, sister terms; Hopi, Zuñi, Isleta, in man's term for younger sister; Zuñi, in man's term for younger brother	Keres, Zuñi (one exception) in grandparent, grandchild terms

Among the other peoples, what of distinctions based on the sex of the speaker and on the principle of sameness or opposition of sex between the speaker and the person addressed? If we consider the first category apart from the second, we find it expressed in certain terms for parents, for mother's brother, and for younger sister, a male speaking. At San Felipe a woman's vocative for mother is yaya, a man's vocative is said to be ya. (As this distinction was recorded only from one informant, it is possibly merely the usage of one family.) Among all the Eastern Keres the woman's vocative for father (and father's brother) is different from the man's vocative. At Cochiti the descriptive term is also different. Among all the Keres a woman's term for mother's brother is different from a man's term. Among Hopi, and at Zuñi and Isleta, a man has a distinctive term for his younger sister, and at Zuñi a man has also a distinctive term for his younger brother. Among the Keres all the sister-brother terms vary with the sex of the speaker. The principle of sameness or opposition of sex *per se* is not found at Isleta, Jemez, or Taos, or among the Hopi or Tewa; it occurs throughout the grandparent terms among the Keres and, with one modification, at Zuñi. In the application of the category of sex to the nomenclatures there are obviously considerable variations.

[8] Cf. Yuman usage (E. W. Gifford, Californian Kinship Terminologies, UC-PAAE 18: 123–4, 1922).

There is a striking uniformity in terms for marriage connections; throughout, there are two specific terms, one for the male connection by marriage, one for the female. These terms are used reciprocally, among the Keres and at Hano as reflexives. At Isleta there is a reciprocal for parent-in-law, child-in-law, and specific terms for sister-in-law and brother-in-law, which may be merely the terms for male or female connection by marriage used differently by different informants. Among the Northern Tewa there is a term for the sister or brother of the spouse[9] and etymologically related terms for mother-in-law and father-in-law. Also a specific term is applied to the wife of the mother's brother and at San Juan to the husband of the father's sister. Throughout the Pueblo all affinity terms are used for the most part descriptively; in address the term used is the one used by the spouse or corresponding to that applied to the connecting relative.

Terms of affinity have not been affected among the Eastern Pueblo, as far as I can see, by the change in their theoretical attitude toward marriage stability as induced by Catholicism. Naturally, the degree of permanency in marriage does not affect affinity terms, terms for step relations, as does the form of marriage, e.g., polygyny. No Pueblo would refer to a step parent as "your husband" or "that woman" as do for example the Kiowa.

With one peculiar exception at Zuñi, there is no direct indication, in the nomenclature, of marriage choices among relatives by consanguinity or affinity. At Zuñi the term for stepmother and for father's brother's wife and wife of cousin (paternal?) of an older generation is identical. There is nothing, either in Zuñi custom or folklore, to corroborate this suggestion of a levirate. Indirectly or etymologically, there are suggestions of cross-cousin marriage at Zuñi and perhaps among the Hopi. In custom there are some suggestions of sometime cross-cousin marriage among the Hopi,[10] at Hano,[11] and at Laguna. At Laguna I was told explicitly that to use the reciprocal of father's sister's daughter and mother's brother's son was tantamount to using a wife-husband term.

Seniority

Among all the tribes the principle of seniority finds expression throughout the sister-brother terms, except among the Keres. (See table 5.) Among the Northern Tewa and at Zuñi, there are also special terms for the older and younger sister of the mother, and compound, descriptive terms at Zuñi carry out the principle in a notable degree. At Hano, too, the principle is

[9] Same as obsolete term for wife at Hano. (Freire-Marecco, 280.)

[10] E. C. Parsons, Getting Married on First Mesa, Scientific Monthly, 264–265, 1921.

[11] Freire-Marecco, 286–287.

much observed, not only between actual sisters and brothers, but, as at Zuñi, between parallel cousins. In the case of cross-cousins at Zuñi the descendants of a sister are reckoned senior to the descendants of a brother, and so they are among the Hopi, at Laguna, and at Hano,[12] since the father's sister's daughter and son are given aunt and father terms. But in all these cases a principle of clanship, I believe, rather than of seniority[13] is involved.[14] At Taos the seniority or age principle is conspicuous *per se* since senior cousins are given the aunt-uncle terms, and junior cousins their reciprocals. In Keresan, there are descriptive terms for the oldest or youngest in the family and the terms are used instead of personal names, much as our word junior is used, or, in Portuguese, *caude* (tail). Nawaí is a Keresan term of seniority which is applied to the eldest member of the clan or of a kin connection, somewhat as the term ka'je, mother's older sister, is used toward a female elder at Hano.

TABLE 5. PRINCIPLE OF SENIORITY

Aunt-uncle	*Sister-brother*	*Cousins*
Zuñi, mother's sisters, and in compound terms; Northern Tewa, mother's sisters; Santa Clara, uncle	General, except Keres	Zuñi, Hopi, Laguna, Hano, descendants of sister senior to descendants of brother; Taos, in relative ages of speaker and cousin spoken to; general, where sister-brother terms are used, involving the principle

What conclusions are to be drawn from these comparisons? First, a conclusion that has been arrived at in several studies of other Indian peoples, that although the social organization finds expression by and large in kinship nomenclature, the tie between organization and nomenclature is elastic. Nomenclature may vary considerably without any variation in organization, and *vice versa*. Take the Hopi data. Clanship is expressed in the

[12] As among Crow and Hidatsa. Also among Muskogean and Pawnee (Lowie, Kinship Systems of Crow and Hidatsa, ICA 19: 341, 1917). Also among the Caddo (Parsons ms.).

[13] But among the Hopi, Lowie noted the application of the grandmother term to the father's *eldest* sister.

[14] Compare Lowie, Hopí Kinship, 380. It seems curious, however, from the point of view of clanship, that the classification of father's sister and father's sister's daughter prevails among the Northern Tewa and even at clanless Taos, although here it is made between father's sister and senior female cousin. It is tempting to speculate that in this general usage for the term of the paternal kinswoman as well as in the great importance of the "aunt" in ceremonial, we have an effect of the patrilineal moiety. But see Gifford, 282.

cousin nomenclature of the Hopi as in that of Zuñi or of the Keres or of Hano, but although clanship is a more significant factor in Tusayan life than, let us say, at Zuñi, among the Hopi, unlike at Zuñi, clanship finds no expression in grandparent terminology—mother's mother and father's mother must belong to different clans—yet for these relatives there is an identical term. Again at clanless Isleta and clanless Taos there is a distinctive term for father's sister,[15] a term some of the beclanned Keres lack. The variations in the expressions of the category of sex afford other illustrations of variability in nomenclature with homogeneity in organization. On the other hand, were we to consider, in view of the maternal clan of the West and householding there by women, and, we may add, the greater prominence of women in ceremonial life, that the female sex is of more consequence toward the West, just as, in view of the patrilineal moiety of the Northeast and householding by men and the more exclusive control of the ceremonial life by men, were we to consider the male sex more important in the Northeast, we would look in vain for any expression of these distinctions in the nomenclatures.

Our second generalization is that a given principle of classification may preclude another principle of classification—again without any actual differentiation in the social organization. Clanship is well developed among the Western Keres, but it may find no expression in grandparent terminology because of the predominance of the principle of sameness or opposition of sex. Among the Tewa the principle of reciprocity and at Taos the principle of seniority are developed in a way to preclude indication of the sex of the person addressed.

Plainly enough this reciprocity system of the Tewa is an outcome of language, without connection with social organization. And in this case of language interfering with the expression of a fundamental social category we have an illustration of our third generalization, namely that some of the differentiation in Pueblo nomenclature is purely linguistic,[16] determined merely by linguistic principle or even vagary, by such a linguistic accident as a borrowed term with its effect on other terms. A most striking instance is afforded at Laguna in the effect of the use of the term, s'amuiti, upon the nomenclature. This term—my boy, my kinsman, my son—is not used, we note, at Santo Domingo or Cochiti. Its use as son at Laguna leads to the anomalous application of the term for mother to a man's sister's daughter. Still another Laguna variant tempts to linguistic interpretation—umu means a man's brother at Laguna, whereas among Eastern Keres umu means

[15] Also at Sandia. (Parsons, Further Notes on Isleta, 152.)

[16] Compare Lowie, Kinship Systems of Crow and Hidatsa, 340–343, 1917.

a man's father. Again must we not infer, given the same conditions of household life among the Keres as elsewhere, that the lack of seniority terms is an accident of language, unless it is perhaps an outcome of conflict between the principle of seniority and the principle of sameness or opposition of sex where the former principle was worsted? Still again, given the same conditions of life it is difficult to see in the occurrence at Zuñi, Isleta, and among the Hopi of a specific term for a man's younger sister anything but a linguistic expression. In fact I would go so far as to suggest that the application to Pueblo nomenclature at large[17] of the principle of seniority is little more than a linguistic habit or convenience among a people inclined to avoid the use of personal names.

The application of the principle of seniority in some of the uncle-aunt classes in the West through compound terms such as "big father" or "little mother" illustrates the need of a close knowledge of prevailing linguistic usage in considering kinship terms. Actual terms do not tell the whole story. Through the use of descriptive or compound terms a habit of mind may find as full a satisfaction as through specific terms.

Again in study of borrowed terms knowledge of the language in general is necessary, indispensable in fact. There are to be observed in table 1 (p. 380) a few outstanding, simple cases of borrowed terms—nana for grandfather at Acoma and Laguna is obviously borrowed from Zuñi, and the Hano term for older sister appears to be borrowed from the Hopi—but to understand such a change as that in application of the term umu from "father" among Eastern Keres to "elder brother" among Western Keres, etymological insight is called for. When the borrowed term for grandfather, nana, displaced the term s'omumu (mumu), was the term umu for father likewise, at Laguna, displaced? Without more etymological knowledge than is as yet available, this question, together with other variations in the Keresan terms given in table 6, cannot be analyzed.

Table 6 illustrates not only the call upon etymology, but with table 7 a curious although not unfamiliar kind of distribution—the same word used in different application in different groups. Of this usage a still wider observation may be made in the case of the word meme. Among the Eastern Keres, it is a brother-sister reciprocal. At Hano, San Juan, Isleta, and Taos it is used for mother's brother, and at Tesuque for father's brother. At Santa Clara it is applied to the younger brother of father or mother and at Nambé to the brother of father or mother, i.e., uncle. Papa is another word differently applied, meaning grandparent-grandchild between opposite sexes, among Keres; grandfather, among Hopi—also older brother; older

[17] Hopi excepted.

brother, at Zuñi, Isleta, and Taos. Probably the slightly different Jemez word for older brother is to be identified with papa, and possibly even the Tewa older brother term. Nana means at Zuñi grandfather, grandson; at Acoma and Laguna, it is a grandfather-grandson reciprocal; at Isleta, it is vocative[18] for mother, a borrowed Spanish term; and at San Juan it is applied to the wife of the mother's brother (meme) or anyone you call meme.

TABLE 6. KERESAN VARIANTS

	Father	*Older brother* (m. sp.)	*Mother's brother* (w. sp.)	*Father's sister*	*Older sister* (m. sp.)
Acoma	naishdía	s^{t}atiuma (tiuma)		mother term	s^{t}akuich
Laguna	naishdyí ya	tyumĕ, umŭ	s'amuiti	s'akúya	akwi
Santo Domingo	s'anashd^{ya} (voc., omŭ)	s'atyumi (tyumi)	s'anyenye	s'ákuya s'akwishe	s'ameme (meme)
San Felipe	s'ánaish'ye, umŭ$^{'}$ (s'ánaish)	s'átyumŭ (tyumŭ)	s'ányenye (nyenye)	mother term	s'ameme (meme)
Cochiti	s'anashtush, w. sp., umŭ, umu, m. sp.	sad^{y}umishe chuchumi		mother term	meme

TABLE 7. TEWAN VARIANTS

	saiya	*meme*	*tq'nǫ*	*ko'o*
San Juan	grandmother	mother's brother; husband of father's sister	father's brother	mother's younger sister
Santa Clara	great grandmother	mother's or father's younger brother	mother's or father's older brother	mother's younger sister
Tesuque	father's mother	father's brother	father's brother	mother's younger sister
Nambé	father's mother	mother's or father's brother		mother's sister

[18] Used descriptively at Sandia.

In borrowing the Zuñi term for grandfather, grandson, the Western Keres have fitted it into their reciprocity pattern, i.e., they do not apply the term to grandfather, woman speaking. Again the Eastern Keres make a reciprocal of that rover term, meme. At Santa Clara, where reciprocity is provided for by diminutive suffix, meme is appropriated by the prevailing principle of seniority and applied to junior uncle. These are good instances, I think, of acculturation in nomenclature. Acculturation or other processes of variation may be looked for in kinship nomenclature among the Pueblo just as in pottery design or in ceremonial organization.

HARRISON, NEW YORK

NAVAHO DREAMS

By WILLIAM MORGAN

FOR at least fifty miles around x,[1] it was generally known that C, a Shooting Chant shaman, intended to have a Night Chant held for himself. These nine-night ceremonies (the Navaho count by nights rather than by days) are primarily for the curing of sickness. Eleven Indians were independently asked what sickness C had. The replies were similar: he was not sick but the ceremony would mean good health for the next few years. I knew that t had discussed this ceremony with C and had given him credit to cover part of the expenses, but t's reply was the same. Here, then, was verified information that a Navaho ceremony could prevent future illness. It appeared that C was having considerable difficulty in raising the necessary eight or nine hundred dollars for this Night Chant, and it seemed improbable that this ceremony was mere insurance. The suggestion was offered by t that perhaps C had had only three of the four ceremonies which every Navaho should have before he dies. My inquiry had now run into conjecture, and consequently I went to C's hogan with a friend who spoke Navaho. After the usual half hour of talk and jokes and playing with the grandchildren, the conversation came around to the Night Chant. C said, very characteristically, that he did not want to have this ceremony but his family were sure that he must have it. O said he must have it. M said he must have it. (O and M are male diagnosticians[2] with motion-in-the-hand.) And so he will have it. These medicines and masks which he handles are too strong. Something will happen to him. Last month, he dreamed that many gods came after him. They tried to drag him away to a mountain. Many Yei (who are prominent in the Night Chant) were among these gods. These gods were trying to kill him. Since then, he has had this dream again and again. He asked O what he must do about this dream. O said that the medicines and masks which he handled were too strong; that the gods were trying to kill him. He must have a Night Chant. He told his dream to M, and this man said what O had said.

This dream developed into an important event in the vicinity of x. Many discussions were held with relatives, friends, and a trader concerning the financing of this Night Chant. Word was sent to a shaman in another part of the Reservation asking for his services. Other ceremonies would be so arranged that they might not conflict with C's Chant. A team of dancers could be heard in the evening rehearsing. Five or six hundred families made

[1] Capital letters denote Navaho informants, small letters designate white informants: "x" is trading post.

[2] William Morgan, Navaho Treatment of Sickness: Diagnosticians, AA 33: 390–402.

plans to attend the ceremony. Obviously, dreams are significant factors in the everyday life of Navaho; and some discussion of the attitude of C toward this dream, and its interpretation, is necessary; the more so because of the thought processes or types of causality which C believed and used in his conversation, which has been paraphrased above.

Whether a dream is a bad dream, and hence whether something ought to be done about it, is determined, in general, by the disturbing nature of the affect which persists after the dreamer has awakened. Obviously, this was a bad dream, and, in fact, could be termed a nightmare. A Navaho seldom comments on a dream further than to say that it is good or bad; and if it is bad, he assumes that something undesirable is going to happen to him, and he must do something to forestall it (E, B, K, P). Dreams are generally warnings. In this case C consulted two diagnosticians, whose function it is to discover the cause of the dream, what is going to happen, and how to prohibit the anticipated event. Usually the dreamer feels sick by the time he comes to the diagnostician, and, consequently, unless the dream clearly reveals a cause, such as the hostility of the Yei gods in C's dream, the diagnostician, often in a trance-state, will obtain the cause of the sickness without reference to the dream. This will be discussed in connection with another dream.

C, being a shaman, was familiar with gods, dreams, and sickness, and believed that they were causally related. He was convinced that his dream was a warning, and that unless something were done, he would be sick. He was satisfied that the gods were hostile, especially the Yei, and he knew that his ceremonial paraphernalia contained powerful forces. Through physical contact and the constant proximity in his hogan of ceremonial objects, these forces could enter him, and cause him to be sick. He was certain the Yei particularly needed propitiation and the Night Chant would, therefore, be appropriate. In addition, the ceremony would rid him of these undesirable forces already in his body. Ordinarily, it is the function of diagnosticians to diagnose and prescribe, but, in this case, it is doubtful if they did more than confirm C's opinions.

This description leaves much to be desired from the white man's point of view. What caused the Yei to be hostile? What agency warned C by a dream? Suffice it to say, the explanation satisfied C. I asked no further questions because a Navaho has plenty of answers for a persistent white man.

In the reasoning processes used by C for the interpretation of his dream, certain types of causality, also accepted and used by other Navaho informants, are evident, and require comment. Rather than add to the exten-

sive literature on mental processes by another set of arbitrary definitions, the outstanding work of Piaget will, in part, be borrowed verbatim. M. Jean Piaget has differentiated seventeen types of causality, as manifested in the thought-processes of French children. The first six of these are modified or discarded by the time the child reaches the age of eight.[3] In this paper, attention will be called to these six types, which occur in connection with Navaho dream interpretation. No doubt, all of Piaget's types could be demonstrated in the general conversation of an adult Navaho. So long as dreams and other manifestations of the unconscious can produce serious physiological disturbances, these types of causality will persist, regardless of compulsory education and allied activities. So long as white doctors confine their treatment to the purely physical causes of sickness, there will remain an essential need for the tribal ceremonies, which deal directly with the psychogenic factors of sickness. This will become increasingly apparent in the subsequent pages of the present paper.

Inasmuch as the thought-processes of adult Navaho are to be described with definitions derived from the study of white children, a paragraph of warning is relevant.

Sir E. B. Tylor used the word "child-like" in describing the individuals of primitive tribes, and this word stimulated others to record numerous haphazard observations of white children, which appeared to resemble the behavior of "savages." In this paper, it is suggested that one of the properties of the mind of man is the instinctive use of certain types of causality. A study of the relative prevalence of these types, in the everyday life of the adult Navaho, would add materially to a description of these Indians, but it is to be clearly understood, that these six types are here demonstrated in matters of dream interpretation and sickness; whereas, Piaget shows the prevalence of these types in a child's assumptions about clouds, wind, bicycles, rivers, etc. To form any opinion about how "child-like" a Navaho adult is from the preliminary references in this paper would lead to extensive errata. The only permissible comparison is with the mental processes of white adults at Lourdes or of white patients in hospital wards.

Navaho myths record instructions from the gods concerning the preparation of masks which resemble the gods, and objects used by the gods in their own ceremonies. If these instructions are carried out, the objects will contain powers which can bring about specific results, and these powers or

[3] It is of interest to note that Grock, the clown (with whom no other clown can stand comparison), continually uses ten of the first twelve types of causality, as defined by Piaget, either separately or in combination during his performances. The reaction of white adults to these immature thought-processes is too well known to require comment.

forces may emanate from the objects. These objects could be said to contain "mana," in so far as C's subjective attitude is concerned. Jung found at Mt. Elgon, in Africa, that mana may be the voice of the chief, or his breath, his wife, his chair, his hut. A spear, a canoe, lightning, certain trees may be mana. These different things are identical under the aspect of mana. The natives have the same attitude to them all. When mana is concerned, it does not matter what the objects are, it is only the subjective emotion that matters.[4] C's belief that his ceremonial paraphernalia may emanate powers or forces; and especially his belief that the forces in his body, which were working to kill him, were the same forces which resembled and, in fact, were identical with the forces in his ceremonial objects demonstrates, in general, a type of causality "by participation": where

> two things, between which there subsist relations of resemblance or of general affinity, are conceived as having something in common which enables them to act upon one another at a distance. . . . Air or shadows in a room emanate from air and shadows out of doors.[5]

This type of relation disappears after the age of six.

As a matter of fact, the manner in which these forces got into C's objects emphasizes a second type of causality. C's behavior, meticulously prescribed in myths, when preparing these objects, including his gestures, words and thoughts, charged them with power. This may be termed "magical causality":

> The subject regards his gestures, his thoughts, or the objects he handles as charged with efficacy, thanks to the very participations which he establishes between those gestures etc., and the things around him. Thus a certain word acts upon a certain thing, . . . a certain white pebble will bring about the growth of water-lilies.[6]

Another form of causality is apparent in that C is so sure that he will have to get sick, as long as the gods intend to kill him, that he is prepared to spend eight hundred dollars in order to prevent it. This may be called a form of "moral causality" where:

> the child explains the existence of a given movement or of a given feature by its necessity, but this necessity is purely moral: the clouds "must" advance in order to make night when men go to bed in order to sleep.[7]

---

[4] C. G. Jung, Remarks in Zurich seminar, 1929.

[5] Jean Piaget, The Child's Conception of Physical Causality, 261. New York: Harcourt Brace, 1930.

[6] Piaget, *op. cit.*, 261.

[7] *Ibid.*, 261.

In spite of the fact that C's dream could be termed a repetitive nightmare, he was not yet sick. This is unusual. When a Navaho wakes up after a disturbing dream, he describes his condition as "feeling sick" (B, E, P,). K said that he had more than once dreamed of falling down a canyon, and had waked up when halfway down. Each time, he had been sick the next day and continued so for several days. In such cases, if the dreamer consults a diagnostician, he asks to be cured of his sickness. The dream gives no manifest clue to the cause of his sickness, hence the diagnosis, generally revealed in a trance-state, and the prescribed cure, ignore the dream. When some spirit is the cause, P reasons that if a Chant is given to the ill-disposed spirit, this entity will withdraw its destructive influence from the dreamer's body and will not send dreams into his head.

A phase of C's dream, which portrays the gods as they are described in Navaho myths and as impersonated in the ceremonies and accompanying sand-paintings, requires a few references. It has been frequently pointed out that Navaho myths are of immediate significance in the daily lives of these Indians; in part, because portions of them are acted repeatedly during the winter. Although these ceremonies are ostensibly for the cure of sickness this is by no means their only function. Furthermore, when discussing dreams and conscious thought-processes, these myths are important and ever-present ecological factors. In the present instance,C's dream was expressed with myth material, and it has been P's experience that the shamans dream more often "about myths" than other Indians. This influence of myths on dreams, and particularly a shaman's dreams, is obviously to be expected. It is being continually demonstrated on white subjects that if they believe or are told that a certain dream means that a certain event will occur, then very frequently this dream will precede the specific event, which they had no conscious reason to predict. The simplest explanation for this seems to be that their unconscious was aware of certain "signs" of the approaching event, before their conscious mind recognized the significance of these signs. In other cases, conscious or unconscious suspicions that an event has taken place would be sufficient to cause the dream whose traditional interpretation would ordinarily foretell the event.

On the basis of these observations, it can be understood why certain dream interpretations are persistently believed. It is because the interpretation of the manifest contents of a sufficient percentage of them corroborate the facts. Nevertheless, the influence of myths and other forms of suggestion on the dreams of individuals has been casually observed, rather than defined. Needless to say, very little is known about this question of influencing the manifest contents of dreams, and one reason is that those psy-

chologists who are studying dreams do not publish what they say to their patients. All we know is that each one finds the dream symbolism with which he is familiar.

Since dreams are one aspect of an individual's psychic energy, so myths are a similar and generalized aspect of tribal energy, even though these latter derive from the dreams, trances, and conscious elaborations of individual Navaho. Therefore, when a dream contains myth material, in C's case certain gods, it becomes relevant to know what these gods symbolize. This leads directly to an analysis of the latent contents of myths and dreams, which cannot be included in this paper. On the other hand, a few comments about symbols may be introduced, which refer to a non-specific god of the Navaho who does not appear in sand-paintings and is never impersonated. C says he is the highest god, a spirit behind the sun. Presumably this god would not appear in dreams but would be known only by his manifestations. This unseen god is not emphasized by the Navaho (P, E, i, t), as the "Supreme Being" is by the "Christian" Navaho, or as Jung's Somali informant, who belonged to a Mohammedan sect, emphasized the god Chidr. This informant said that his god can appear as an ordinary man, like myself or that man there, and you know that he is Chidr; or he can appear as a light, not the light of a candle or a fire, but as a pure white light, and then you know this is Chidr; or (picking up a blade of grass) he can appear like this.[8]

The Navaho have a name for this god and he thus becomes a symbol, though a formless one. Jung has said that the real nucleus, the basic substance of symbols, consists of unconscious contents that make themselves felt, yet the conscious is unable to grasp their meaning—unable to analyze, to dissect them, to grasp their substance. They are only felt as a dim, but at the same time, a very powerful presence. People feel that they should give a name to that incomprehensible presence, and therefore they use a symbol. The symbol in itself, as a name, is a perfect futility; yet inasmuch as it designates the invisible, powerful presence, it is exceedingly powerful. It is, then, an approximate designation of an invisible and potent fact that influences man from the unconscious sphere. If it had come from the conscious sphere, then naturally it would have been analyzed and understood, and it would have lost its fascination. But, inasmuch as it is a fact, a true fact from the unconscious, which cannot be dissected on account of the inability of the conscious, therefore it remains an explicit and efficient factor that has a definite function.[9]

[8] C. G. Jung, Remarks in Zurich seminar, winter, 1929–1930.

[9] C. G. Jung, Remarks in Zurich seminar, spring, 1930.

These comments of Dr. Jung draw attention to the deification of subjective feelings, such as the fear of lightning, which is represented by the specific Snake-god, who controls zigzag lightning. This deification enables individuals to propitiate an entity, which represents a fear or a need. In fact, the creation of powerful emotions into symbolic images is itself a need of the human organism, and is provided for in all religions. In other words, emotions are gods when the individual cannot control them.

So far as the Navaho are concerned, they are not inclined to arrange gods or other phenomena in categories, but nevertheless when discussing dreams they had no hesitation in dividing dreams into good ones and bad ones. The after-affect of each dream determined this. If the dreamer awoke in an unpleasantly disturbed state he knew the dream was a bad one. There are exceptions. Certain dreams have come to have standardized interpretations. Such a dream does not always produce sufficient after-affect to warrant anything being done about it. But when the dreamer has had time to recollect the standardized interpretation, then the minimum after-affect is often seriously augmented. This varies with different individuals. E said that he once killed five or six bears, and then several times dreamed that bears were after him. He said that, if he had been a nervous man, he would have been worried because the older men consider the bear sacred.

That the after-affect of a dream is sometimes no criterion that a dream is good or bad may be shown from Melland's work in northern Rhodesia, where he found that "every dream has some signification." This writer reports:

> To dream that one is killed by a lion means great success in the chase. . . . In this case, the dreamer goes to a Ng'anga (shaman) who interprets the dream as propitious: after which the dreamer clears a little path up the side of an anthill and models a small lion and lioness, which he places in a miniature hut at the end of the path. When he has killed anything, he takes the heart from the beast, and cooks it by this small hut so that his luck may continue.[10]

The after-affect of such a dream would obviously be one of fear, but it is possible that a traditional "a contrario" interpretation would allay this fear and even instill self-confidence. What seems to have happened, however, is that the dreamer was sufficiently disturbed to consult a Ng'anga, who prescribed a ritual, implying that the dream was bad, but could be converted by the ritual into a good dream. The only problem involved in this situation is that the ritual shall be sufficient, and the belief in its efficacy adequate to prevent a recurrence of the previous emotional state of fear, when the

[10] Frank H. Melland, In Witchbound Africa, 247. London: Seeley Service, 1923.

dreamer is, in reality, hunting lions. Such a recurrence would derange his presence of mind.

On the other hand, the after-affect is sometimes "diagnosed," and the dream ignored. In the following example given by d, he states that if there were a dream involved, no one mentioned it. J had awakened with the feeling of being strangled. He consulted L, a diagnostician, who said that d's eagle had clutched at his throat, and he must have the Eagle Chant, better known as the Bead Chant, held for him. An eagle had been given to d, who kept him in a cage. This disturbed the Navaho, whose religion forbids keeping an eagle in captivity. C, a shaman, who knew the Bead Chant, happened to be in the vicinity and prepared one of the sand-paintings belonging to this ceremony. This picture contained a double row of eagles, and a ritual performance, lasting about twenty minutes, was deemed sufficient to propitiate the eagle; or, to be more exact, the spirits of all eagles. In the previous incident having to do with C's dream, the diagnosticians were asked what caused the dream. In this case, the diagnostician was asked what caused the strangling sensation. This latter is the more usual procedure, for generally the individual is sick by the time he consults the diagnostician and the immediate problem is to cure the sickness. Therefore, it is assumed that remission of symptoms means an eradication of causes and allied manifestations, such as disturbing dreams and their after-affects. To be sure, C's dream produced an after-affect of fear and consequent worry, but these, apparently, were considered by-products. The main factors were the accumulation in him of influences from hostile gods, and an inevitable sickness. In the above eagle incident, what the patient described as a feeling of being strangled was transformed by the diagnostician into a clutching of the throat; and he thought of the captive eagle. To affirm that this particular eagle could cause this clutching sensation demonstrates a "phenomenistic" type of causality; where,

> two facts given together in perception, and such that no relation subsists between them except contiguity in time and space, are regarded as being connected by a relation of causality . . . . Phenomenistic causality is essentially unstable (in the white child); as soon as it is established, a phenomenistic relation transforms itself into one that is animistic, dynamical, magical, etc.[11] . . . the causality which results from phenomenism of this kind is not unlike that which is to be found in primitive races.[12]

Dr. o, who began his Reservation practice nineteen years ago, relates that a Navaho about eighty years old came to him with an abscess in his

[11] Piaget, *op. cit.*, 258.
[12] *Ibid.*, 253.

eye. This Indian said that a long time ago a deer ran close to him. Its horns brushed his eyes. For many days he could scarcely see. Recently, while chopping wood, a splinter came into his eye. He pulled it out. That night he dreamed of deer. Since then he has dreamed of deer every night. If Dr. o would stop his dreaming of deer, then his eye would get well. He was told that his eye must be taken out. He refused. He was told that if this were not done he would lose both eyes and would probably die. The Indian replied that he had lived a long time and that he did not care whether he died. Then he went away. It should be added that the probable facts are that he sought Dr. o in an effort to save anything up to a thousand dollars (the cost of a ceremony); and that he went away not to die, but to find a diagnostician.

This Navaho's exposition of his case is peculiarly characteristic of these Indians [i, o, t] and no better description of it could be offered than Piaget's conclusions, based on data concerning French children's ideas about natural laws, when they are from two to eight years old:

> on the one hand, there is an absence of the desire to find logical justification for one's statements, and on the other, syncretism combines with juxtaposition to produce an excess of subjective and affective relations at the expense of logical implications.[13,14]

No particulars are known about the earlier incident when deer "brushed his eyes." Apparently, he felt that the splinter, entering his eye, had not been due to unseen influences; and that healing would have taken place, as with other minor abrasions, had not some adverse factor intervened. This factor was his repetitive dream. Whereas, a white man would ponder about the several risks of an old man chopping wood, this Indian desired that his dream be stopped in order that the healing might proceed. His attitude indicates a type of causality, which Piaget names "finalism."

> There is simply finality, without either the origins or the consequences of this finalism being noticed by the child.[15]
>
> The deep and stubborn finalism of the child shows with what difficulty external reality frees itself from schemas due to internal and psychical experiences.[16]

It is much the same when we say, in accordance with ordinary common-sense,

[13] Piaget, *op. cit.*, 303.

[14] The substance of these words also forms a daily refrain in clinics of abnormal psychology; and certain case histories of white adults contain data indistinguishable from portions of my (unpublished) Navaho material. For instance, a sequence of symptoms in one Indian neurosis is on all fours with a certain set of symptoms which I have investigated in a white (American) adult.

[15] Piaget, *op. cit.*, 259.

[16] *Ibid.*, 245.

that ducks have webbed feet so as to swim better or when the child says that the river flows so as to go into the lake.[17]

On the other hand, if this Navaho consulted a diagnostician a cause or causes for the influences which were preventing the normal healing process would undoubtedly be revealed to him. In such cases, where an immediate plausible cause would be difficult to find, a remote cause is always available. P, in diagnosing by motion-in-the-hand, has given, as causes for a sickness, the patient's neglect to perform a proper burial. The burial took place many years before, but the Navaho have no statute of limitations operating in such matters. In these cases a "motivation" type of causality is apparent, where gods or the spirits of men revenge themselves because the subject has done something which he ought not to have done, or has omitted to do something which he should have done. Piaget states that among white children

this type of causality is no doubt the most primitive, but it is also the one that survives the longest.[18]

Having called attention to a few thought-processes inherent in Navaho dream interpretation, other material may be mentioned, namely; universal dreams, a ritual for coping with dream-affects, repetitive dreams, dreams of animals, death dreams, and the influence of dreams on the belief and conception of a life after death.

There are certain dreams which are common to all races wherever dreams have been studied. Among Navaho informants, the after-affects of these universal dreams are disturbing, but are minimized because others have had similar dreams and nothing serious has happened. I have no evidence that a series of customary interpretations has developed for these dreams. Sometimes they cause sickness and require diagnosis and treatment. One of the dreams belonging to this category, and which appears to be common [P, E, B, K], is the dream of falling. When B dreams of falling he sometimes spreads his arms and lands lightly. When asked what the dream meant he replied that an educated man might say that it predicted aeroplanes. He was pleased that he, himself, had thought of this explanation. He often dreams of falling from a cliff. Dreams of being lost are not uncommon [P, E]. E has dreamed that he was in a strange country and was lost. Presumably this would be a very disturbing dream because a Navaho is constantly oriented in respect to east, south, west, and north; and meticulously so in his

[17] *Ibid.*, 259.

[18] Piaget, *op. cit.*, 258.

ceremonies. The after-affect, however, is readily dispelled by awaking in familiar surroundings. The loss of a tooth belongs to this type of dream, and is not a good dream [B, K, E]. Such dreams lend themselves unfavorably to a specific diagnosis of what caused the dream.

In case a Navaho is moderately worried about a dream, P states that he may pray at dawn in the door of his hogan, which always faces east. He may pray to the sun-god, whom C believes to be "the highest god," or he may pray before a special stone or object kept for such purposes. An interesting emphasis is thus placed upon the time of prayer, which is the moment of sunrise. Jung has previously called attention to this emphasis based on his fieldwork at Mt. Elgon. He says that the sun is called "adhista." God is called "mungu." To designate the sun as god, they say "adhista mungu." It is the sunrise, or specifically, the moment of sunrise, which is thus named. It is their particular emotion connected with sunrise. When the sun is in any other position, it is called "adhista."[19]

The function of the stone or object in this prayer-ritual was not investigated. Westermarck reports that in North Africa,

> when a person has an evil-omened dream, he may salute a stone in the desert and tell it about the dream, then say: "O, God, bestow upon us its (the dream's) goodness and free us from its evil." Then the bas (impersonal force of evil) will go into the stone.[20]

It has been pointed out that myths, particularly the acted portions, influence dreams; and these dreams, in turn, help to maintain the efficacy of the ceremonies. Likewise, there is the mutual influence of superstitions and dreams. These superstitions may be detached fragments of myths, but some undoubtedly arise like legends: an incident may become exaggerated, or a fear may be repeated to someone and thereafter assume the guise of a fact. H said that dreams about owls are not good. When he went to the mission at night, his mother would say: "Do not go. There are many owls there." In such cases, a dream and a superstition may reenforce each other, and there is always the probability that the superstition arose from a dream.

Repetitive dreams do much to strengthen the traditional beliefs concerning dreams. Considering the amount of variety in the manifest contents of dreams, this phenomenon of repetition is, indeed, remarkable, and is difficult to produce experimentally. B has had dreams that cattle were chasing him, and he always ran for a tree. Once he fell down and he was in terror because he could not get up. Once the tree sank into the ground, so that the

[19] Jung, Remarks in Zurich seminar, autumn, 1929.

[20] Edward Westermarck, Ritual and Belief in Morocco, 2: 47, 1926. Macmillan.

cattle could get at him. He was frightened and woke up. Once the tree moved away with him, and he said that this was a good dream.

Dreams of vertebrates are common, and, for the most part, concern the snake, the coyote, and the bear. Apparently, in each snake there is some of the spirit of the Chief Snake; or this spirit may be in a particular snake at a certain moment, and is likely to harm an Indian by biting him or by causing him sickness, which may or may not manifest itself by a bad dream about a snake (E, P). E has many times dreamed of snakes and these, he said, were not good dreams, for "a snake always does evil." However, he adds that the spirit of a dead person does not go into a snake. Since the Chief Snake is god of zigzag lightning, an amulet which protects from this lightning will also protect the bearer from live snakes (P), but I have no evidence that such an amulet can ward off the affects of snake dreams, or prevent such dreams. The statement that a snake always does evil is of minor importance from the point of view of comparative anthropology.

Amongst the Malays to dream of being bitten by a snake portends success in love.[21]

Obviously, the interpretation of snake symbolism, as well as the secondary beliefs concerning medicine, magic, and religion, become a wilderness of variations when more than two tribes are reviewed. There is a further complication concerning vertebrates. The Origin Myth (as recorded by Washington Matthews) states that the Navaho came into this world through a hole in the earth's surface; and the spirits of the dead return through that hole to the previous world, where all are happy. "These spirits come and go to their graves" (E, P, i, t), and E says that there are skins of birds, bears, and coyotes at this hole, and evil dead spirits may put these on and visit the living. When a dream or a sickness is being diagnosed, it is therefore necessary to know whether the spirit of a deceased man or woman should be propitiated, or the spirit of a bird, bear, or coyote when only the latter appear in a dream or a trance-diagnosis. So far as the diagnostician is concerned, such complications double the ease of his diagnosis; but they also double the apprehensions of the individual Indians.

Another group of dreams might be designated as "death dreams," and concerning these there are certain well-known interpretations. Thus, if a shaman during a ceremony dreams that his patient is going to die he must leave; and another shaman must be called (P). A dream interpretation may sometimes either arise, or be confirmed, by observations of events in the ex-

[21] Sir W. C. Clifford, In Court and Kampong, 189, 1897. Quoted by Ernest Crawley, The Mystic Rose, 232. London: Methuen, 1927.

ternal world. For example, when a Navaho dreams that he is dead, he means that in his dream he was in the next world with the spirits of the dead (B, P, E, K). To be there and to come back is not necessarily a bad dream; but if the dead beckon to the dreamer, or he shakes hands with the dead, it means that he is going to die (E, P). Such an interpretation may well be based on certain delirium observations similar to the following one, which was told by P: In a hogan ceremony, the patient asked the shaman whether he saw four men who had come in and were sitting near the door. Those present in the hogan said they did not see them. The patient reached forward to shake hands with these four men, but fell back and soon died. As an illustration of this interpretation, P dreamed that he was in the next world and a black horse came by with a feather upon his back. The feather changed to P's brother, who had long ago died, but the brother did not beckon to him, "so the dream did not mean that he would die."

Once P dreamed that he was in the spirit-world, where he was driving his sheep and goats. A great crowd of dead people were present. His goats got separated and he lost them, but he got back to earth, though he does not remember how. Getting back to earth is important, and an otherwise bad dream, which would predict death, may thus be turned into a good one. Dr. Paul Radin has previously noted that the Winnebago make this same distinction in their dreams about death (unpublished).

It is difficult to know what an individual Navaho thinks about dreaming. Questions elicited answers in abundant variety, but informants were not interested in the "how" of dreaming; and I found, like all others, that when an informant's interest begins to fade, any further questioning leads to a quicksand of insignificant "information." P stated, however, that it is generally believed that gods, spirits of deceased men and animals, as well as unfriendly Navaho (witches) may put dreams into one's head.

This paper has not only confined itself to the manifest contents of dreams, but the dreams are all "spontaneous," in contradistinction to those which coincide with some particular interval of initiation, fasting, burial, etc. Among the Navaho, spontaneous dreams are extremely important factors in everyday life, and this statement is, in general, corroborated by those who have worked on other tribes, wherever they have had an interest in such material. Contrary statements have been made, however, by certain anthropologists, among whom is the unquestioned authority, Professor Malinowski. He has written that

> spontaneous dreams are not of any great importance in the life of the Trobrianders. No prophetic meaning is ascribed to ordinary dreams.[22]

[22] Bronislaw Malinowski, Sexual Life of Savages, 386. Horace Liveright, 1929.

In another volume, he writes:

> dreams and day dreams are not an easy subject for study among the Melanesians of the Trobriand Islands. It is a remarkable and characteristic feature of these natives, in which they seem to differ from other savages, that they apparenty dream little, have little interest in their dreams, seldom relate them spontaneously, do not regard the ordinary dreams as having any prophetic or other importance, and have no code of symbolic explanation whatever.[22]

It must be added that Professor Malinowski includes under his classification of "typical," "official," "traditional," and "standardized" dreams those which may occur at any time regardless of external circumstances, provided that such dreams have a traditional interpretation. He would probably say that Navaho death dreams are not of a spontaneous type. In pursuing Professor Malinowski's classification, the distinction between spontaneous dreams and those dreams which coincide with some particular interval of initiation, fasting, burial, etc., is obliterated. It is not an important distinction if an anthropologist's work ended with primitive races. But in the study of dreams this distinction between spontaneous and official or incubation dreams remains intact among other races and is informally present today. Professor Malinowski observes that the Trobrianders seem to differ from other savages in that they apparently dream little, have little interest in their dreams, seldom relate them spontaneously, and have no code of symbolic explanation whatever. The methods used in getting these results are omitted. A general method, which has been tested and found workable among the Navaho Indians, and which is also adapted for conversation when more than one informant is present, consists in a directed discussion during which the investigator contributes his share of white men's trances, dreams, visions, superstitions, and religious and medical practices, which bear as close a resemblance as possible to their Navaho counterparts. Further than this, the thought processes and dream interpretations of white men are sometimes analagous, if not similar, to those of the adult Navaho. For example, trial and error has introduced the widespread custom of interpreting certain dreams in a way which is opposite to their manifest meaning, although, it so happens, that this "a contrario" method has gained no credence among the Navaho; at least, among the informants quoted in this paper. That certain dreams would be so interpreted is probable, because the apprehensions of an individual so often find expression in his dreams;

---

[22] Bronislaw Malinowski, Sex and Repression in Savage Society, 92. Harcourt Brace, 1927.

but inasmuch as these apprehensions are exaggerated the event, in reality, turns out otherwise. It has been stated that the Navaho have an easily accomplished ritual for coping with the causes and the results of disturbing dreams; they may pray at sunrise. If the ritual were more difficult, if the Navaho were reticent about their dreams, and if they were in the habit of neglecting their dreams, then the natural course of events would show them that many dreams indicated an opposite interpretation. Since prayer generally intervenes in the predicted or feared outcome of a dream, the commonly accepted interpretations may survive unchanged and unelaborated: dream interpretation will not tend to develop the complexity which it has in many other parts of the world.

In the preceding pages of this paper it has been indicated that informants believe their gods "go and come," and spirits of the deceased "go and come." They believe that these agencies can send dreams into one's head, and influences into one's body; but they are not inclined to say that they themselves "go and come" when they dream of being in the next world. Whether or not their spirits are mobile depends somewhat on how they are questioned. White education may have introduced the tendency to say that it is "as if" one had gone to the spirits' world in a dream.

A tentative investigation was made concerning the existence and physical appearance of the spirits of deceased Navaho. They were described in conversation as resembling "ghost-like" bodies dressed as in life, who are capable of sensing pleasure and pain, and who lead a pantomine life resembling the life on earth. In their external environment there is an absence of pain-producing factors, hence they are happy. The part which dreams fulfill in confirming these convictions and in portraying the life after death is not difficult to demonstrate. White men's dreams seldom distort friends and relatives, though these latter may appear to be doing unusual things. There is no evidence that such is not the case in Navaho dreams; and if so, it seems likely that dreams form the basis of the belief that spirits retain their earthly appearance; and that, in accordance with this belief parts of their burial customs came into being.

In discussing briefly the manifest contents of dreams, it is difficult to limit arbitrarily the ramifications of each dream, as has been done in this paper. Almost any dream serves as a point of departure for an investigation of sickness, for an exposition of related fragments of mythology (religion), and for an analysis of the dreamer by a study of the latent contents of a series of his dreams. In this paper, the manifest contents of a few selected dreams and the Navaho interpretations of these contents have served to demonstrate six types of causality in the thought processes of specified

informants: to emphasize the interdependence of certain dream interpretations with the Navaho religion; and to show that dreams are factors influencing the everyday life of these Indians, and resulting in behavior, often recorded but inadequately described in the literature.

984 MEMORIAL DRIVE
CAMBRIDGE, MASSACHUSETTS

THE ALGONKIN SEQUENCE IN NEW YORK[1]

By WILLIAM A. RITCHIE

IN HISTORIC times the great Algonquian stock extended over an immense fan-shaped territory stretching from an apex on the lower western boundary of Alberta, through upper Montana, northeastward nearly to the sixtieth parallel, over all of Quebec, lower Canada, New England, the Great Lakes region, and southward through the Mississippi valley to northern Tennessee, embracing most of the district eastward through Kentucky and West Virginia to the Atlantic.

Like an island in the northeast lay the largest of the Iroquoian provinces. With New York as its center, one peninsular arm penetrated the whole interior of Pennsylvania, another intruded on northern Ohio and southern Michigan, while a third reached through lower Ontario and the St. Lawrence valley to the Gulf.[2]

Most of this territory, from Lake Winnipeg eastward, lies in the Eastern Woodland area and was populated by the Central Algonkin, comprising the Ojibway, Ottawa, Menomini, Sauk and Fox, Potawatomi, Peoria, Illinois, Kickapoo, Miami, Shawnee; the Siouan Winnebago; and the eastern Algonkin tribes, the Abnaki group, Micmac, New England tribes and Delaware.[3]

In large part the archaeological and ethnological culture areas, into which North America has been subdivided through the correlated work of many investigators, tend to coincide, yet several archaeological provinces are embraced wholly or partly in the Eastern Woodland area,[4] the result of greater group migrations in this region than have been general elsewhere both in ancient and in comparatively recent times. The Iroquoian tribes represent a late intrusion from a southern center, and the Great Lakes area is a definite locus of intrusive mound culture, also derived from the south but at an earlier period.

The contiguous Canadian area is little known, but scattered vestiges seem attributable to the Algonkin.

In the eastern part of the Woodland area the North Atlantic province constitutes a peripheral region sheltering various Algonkin tribes until historic times, while shell-heaps and village sites prove a lengthy occupation.

---

[1] By permission of the Board of Commissioners, Rochester Museum of Arts and Sciences.

[2] J. W. Powell, Indian Linguistic Families of America North of Mexico, BAE-R7, 1885–86.

[3] Clark Wissler, The American Indian, 234–237 (New York), 1922.

[4] *Ibid.*, 364.

An old culture, too, underlies the mounds in part of the Great Lakes region, the industrial vestiges of which compare closely with recognized Algonkin forms.

Below the recent Iroquoian deposits in New York state, which is divided between the Iroquoian and the North Atlantic areas, are abundant traces of a much older occupation assignable to the Algonkin from the fact that the numerous shell-heaps about the coast line of the state preserve in unbroken continuity from bottom to top, series of bone, stone, and pottery artifacts, ranging from pre-Columbian in the lower levels to a colonial intermixture near the top. Historical records convey the fragmentary story of Dutch and Algonkin contact, affording meager descriptions of the Indians and their mode of life.[5]

Several investigators have written on the Algonkin occupation of New York, the most prominent being Skinner, Harrington, Pepper, Bolton, Finch, and Parker. The only comprehensive and synthetic treatment of the subject is by Parker,[6] whose threefold division is followed in this paper. But the culture congeries enumerated by Parker,[7] and later by Skinner,[8] for each horizon have undergone some modification through recent work on several large New York sites by the writer and his colleagues under the supervision of Parker. It now seems more probable that the Algonkin of the Second Period were derived from the southeast, rather than from the west, whence they introduced the brachycranial factor, agriculture, pottery, and polished slates, while the Algonkin of the Third Period represent an internal development of those of the Second Period (with some slight "mound-builder" infiltration), to which was added the powerful influence of incoming Iroquoian tribes.

The first waves of what we may regard as Algonkin people are considered by Parker,[9] to have pushed into the state from the west, the direction of the "apex of the fan," some thousands of years ago, being eastern detachments of some of the tribes which were milling out from the upper

---

[5] E. M. Ruttenber, History of the Indian Tribes of the Hudson River, (Albany), 1872; R. P. Bolton, The Indians of Washington Heights, AMNH-AP 3, 1909.

[6] A. C. Parker, The Archeological History of New York, New York State Museum Bull. 46–50, 1920 (cited as History, hereafter); The Algonkian Occupation of New York, New York State Archeological Assoc., Researches and Transac. 4, no. 2, 1923.

[7] Parker, History, 50–79; also same author, Aboriginal Cultures and Chronology of the Genesee Country, Proc. Rochester Acad. Sci., 6: 251–255, 1929.

[8] Alanson Skinner, General Archaeological Criteria of Early Algonkian Culture, *in* The Algonkian Occupation of New York, N. Y. State Arch. Assoc., Researches and Transac. 4: 29–41, 1923.

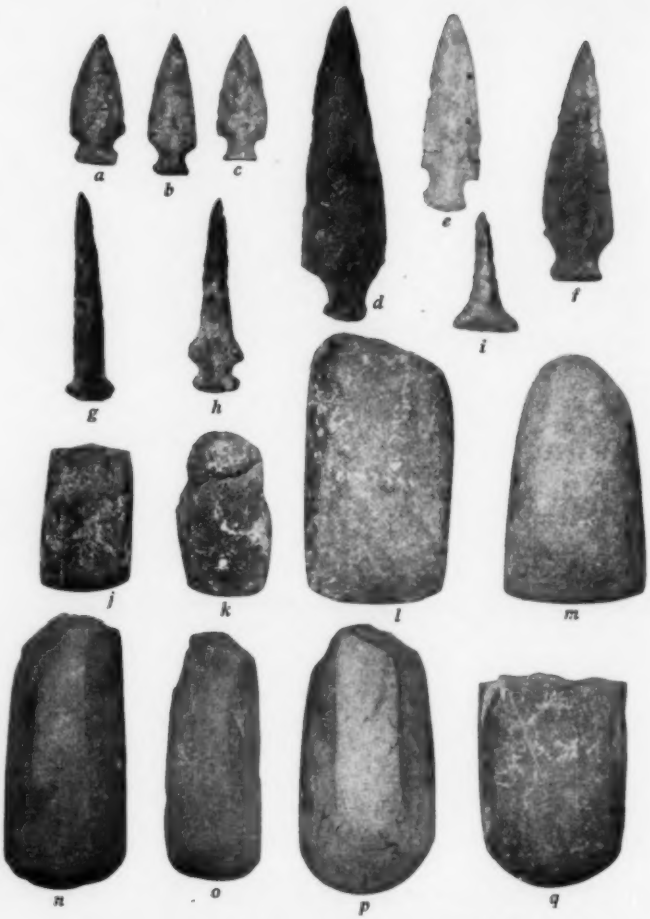
[9] Parker, History, 41.

plains. Scattered desultorily over most of New York, particularly along the courses of large rivers and small lakes, are traces of this Archaic occupation. They seem to have been scattered by large nomadic bands, which often established winter camps in the level fields at the juncture of a small tributary with a large waterway. No pits or ash accumulations are ever found on these sites, although the area over which objects are scattered is usually considerable. This has suggested a numerous population but a short sojourn, the incidentally scant ash deposits being subsequently dissipated with the loss of their osseous contents. Until the exploration of the great village site at Lamoka lake (Schuyler county), therefore, only objects of stone were known from this period. At this station ideal conditions of isolation and proximity to food resources had led to the settling of a permanent village, in the deep débris of which a wealth of bone and antler material had survived side by side with thousands of stone objects identical in character with the scattered specimens from the camp sites.[10]

The most characteristic type implement of the Archaic Algonkin is the faceted or beveled adze (pl. 9*n–p*) which has never come to light on any site of later period in New York state or elsewhere to the writer's knowledge. With it are associated at Lamoka lake, the key station, as well as on the numerous temporary sites, the following articles which may be accepted as the criteria of the Archaic Algonkin Period: the plano-convex adze (pl. 9*q*), rectangular and triangular celts (pl. 9*l*, *m*), celt-like scraper (pl. 9 *j*, *k*), cylindrical pestle, shallow mortar and muller, pitted and unpitted hammerstones, anvil stone, notched net-sinker, straight stemmed and notched arrow, spear and javelin heads (pl. 9*a–f*), knife blades and perforators (pl. 9*g–i*). The bone and antler industry of Lamoka lake includes various kinds of awls, double-pointed bone implement (pl. 10*o–s*), fishhook (pl. 10*a–i*), gorge (pl. 10*j–n*), knives or scrapers made from the scapula of the deer (pl. 10*dd–ff*), bird calls or whistles (pl. 10*t*, *y–aa*), beaver teeth worked for knives or scrapers (pl. 11*e*), antler punch (pl. 11*k*), a unique class of antler objects (pl. 11*i*, *m–p*), turtle carapace cups and several problematical forms (pl. 11*a–c*, *l*). The dog was used and probably baskets, but pottery, steatite, worked shell, native copper, polished slate, and carbonized agricultural products were totally lacking, as was the grooved ax, gouge, and bone harpoon.

The cemetery at Lamoka lake was not discovered but some human remains, in part mutilated and containing embedded arrowpoints, occurred in refuse pits and were, on justifiable grounds, attributed to the occupants. These are the only skeletons of the Archaic period known and they reveal a

[10] Explored 1925–1927 by Rochester Museum of Arts and Sciences.



Chipped and polished stone implements from the Lamoka site (Archaic Algonkin). *d* is 5¼ inches in length.

Bone implements from the Lamoka site (Archaic Algonkin). *l b* is 7¼ inches in length.

Bone and antler artifacts from the Lamoka site (Archaic Algonkin).
p is 9¼ inches in length.

a *b*

Adult male skulls from the Lower and Upper Horizons at the Lamoka site (Archaic and Second Period Algonkin).

long-headed population,[11] with high skull, narrow nose, high narrow face and orbits of medium height (dolichocranial, hypsicranial, leptorrhine, leptoprosopic, mesoseme). (Pl. 12*a*).

From the presence of the beveled adze in lower Ontario,[12] northern Ohio,[13] in lower New England,[14] in eastern Pennsylvania,[15] and throughout the course of the Susquehanna,[16] the range of the Archaic Algonkin may be inferred. It is very rare in most of these localities, being most abundant in the Susquehanna valley and it usually occurs as strays without definite context. Although the writer can find no reference to the appearance of this type of adze south of Pennsylvania, he considers the probability high that a wave of the Archaic population intruded even farther south, where it encountered influences which were radically to modify it both physically and culturally.

On the surface of the Lamoka lake site and in the superior layers of a few pits, which often exceeded four feet in depth, were encountered artifacts of stone, bone, shell, and pottery, totally distinct from the Archaic congeries. They occurred, too, as the grave goods of the few prepared graves, clearly intruded into the older débris, from which brachycranial skeletons were recovered. These comprised the grooved ax, gorget, bannerstone, sinew stone, grooved maul, chopper, marine shell beads of several varieties, hematite and poorly levigated, pointed-bottomed pottery of parabolic shape, with impressed twig, fabric, and punctate ornamentation (pl. 13*a*–*e*).

Anthropometric studies of the crania reveal a type in striking contrast with the Archaic inhabitants, who appear to have suffered severely at the hands of the invaders. The head form was broad and high-vaulted, with broad nose, low and relatively broad face and low orbits (brachycranial, hypsicranial, platyrrhine, chamaeprosopic, microseme, pl. 12*b*).

This is the predominating culture of the coastal shell-heaps about New York City and on Long island. Middens and village sites examined by Harrington,[17] Skinner,[18] Pepper, Parker,[19] and others at Cold Spring on northern Manhattan island, Pelham Bay park, Weir Creek point in

[11] Writer's studies embodied in unpublished manuscript.

[12] A. C. Parker, ms. notes.

[13] Henry C. Shetrone, and E. F. Greenman, personal communication.

[14] Warren K. Moorehead, personal communication.

[15] Max Schrabisch, personal communication.

[16] Based on the collection of Dr. T. B. Stewart, Lock Haven, Pennsylvania.

[17] M. R. Harrington, Ancient Shell Heaps near New York City, AMNH-AP 3, 1909.

[18] Alanson Skinner, Archeology of the New York Coastal Algonkin, AMNH-AP 3, 1909.

[19] A. C. Parker, Two Characteristic Coastal Algonkin Sites, *in* The Arch. History of New York, part 1.

Greater New York, Port Washington, and Oyster bay, Long island and elsewhere have yielded the grooved ax, gorget, bannerstone, grooved hammer or maul, chopper, sinew stone, "bola" stone, net-sinker, cylindrical pestle, pitted stones, celts, celt-like scraper, plano-convex adze, plummet, perforator, notched and barbed projectile points, ocean shell beads, steatite, pointed-bottomed pots without collars, marked with fabric cord, twig, and punctate patterns (like pl. 14), crude pottery pipes, some native copper beads, hematite, bones of the dog, charred corn and beans, the bone gorge but not the fishhook or harpoon, awls, flat needle, antler flaking tool, bead, beaver tooth knife, and antler arrowpoint.

The combination of brachycephaly with such distinctively new elements as clay and steatite pottery, the pipe, grooved ax, polished slates, and marine shell beads has compelled the writer to postulate a southern source for the Second Algonkin culture of New York. These artifacts occur together over much of the South Atlantic as well as the Mississippi-Ohio area. Moreover, a skull form identical with that found in the upper level at Lamoka in general distinguishes the Muskoghean tribes,[20] whose known range to South Carolina is believed to have early extended as far north as Virginia.[21] Other tribes like the Algonquian Shawnee, known to have been great rovers, the ancient stone-grave people of Tennessee and Kentucky[22] and their predecessors in Kentucky,[23] shared this same physical type.

The center of influence and diffusion cannot at present be determined. Some of the exotic stone material recovered at Lamoka has been expertly identified with New Jersey outcrops and the very frequent association of this culture with shell-heaps (even at Lamoka where freshwater mussels occurred with pottery) suggests that these people had for a long time lived in proximity to the sea. Everything considered, the region about Chesapeake bay is a likely source from which Archaic Algonkin groups, acculturized with such new increments as pottery, polished slates, and the grooved ax, and physically modified by a round-headed population, were turned northward again through the pressure of renewed group movements. That these new invaders were Algonquian, despite the radical alterations they introduced, and not actually of Muskoghean or other stock is certain from their having persisted as the Coastal Algonkin of historic times. This is clear from both physical and cultural remains, although it will presently

[20] R. B. Dixon, The Racial History of Man, 434–435, 1923. Scribner's, New York.

[21] A. C. Parker, unpublished data.

[22] Dixon, *ibid.*

[23] W. D. Funkhouser, and W. S. Webb, The So-Called "Ash Caves" in Lee County, Kentucky, University of Kentucky, Repts. in Arch. and Anthr. 1: 110, 1929.

Potsherds from the Lamoka site (Second Period Algonkin).

Restored pottery vessel from site near Mt. Morris, Livingston county, New York (Second Period Algonkin). Height 15½ inches.

be shown that mutations followed as the northward trend of the invaders brought them into contact with Archaic bands still resident in New York.

Shell middens on the Connecticut,[24] Maine[25] and Nova Scotia[26] coasts, apparently related to certain inland sites, probably mark a northward extension of the Second Algonkin occupation of New York, for they contain such characteristic artifacts as stamped pottery,[27] the grooved ax,[28] plummet,[29] broad-bladed projectile points, perforated animal teeth, the bone gorge, and hematite. An innovation appears in the bone harpoon, which is relatively common in the northern middens but totally absent along the New York coast and at Lamoka lake. A broken specimen was, however, recovered on an inland New York site, referable to the Second Period.

The hostile character of the initial contact of the Archaic and Second Period Algonkins, witnessed at Lamoka lake, apparently subsided into a more amicable relationship, for the skeletal remains found on several sites in central New York portray the results of some degree of amalgamation of the dolichocranial and brachycranial populations. These new head forms are predominantly mesocranial, hypsicranial, and platyrrhine. Graves on the Backus site, on the east shore of Cayuga lake (Cayuga county), the key station,[30] yielded marine shell beads, a steatite vase-type pipe with an effigy of the human face carved on the bowl, closely similar to a specimen from a shell-heap at Inwood, Manhattan island, and hematite, while stamped Algonkin pottery and bone beads lay in refuse accumulations close by.

Less than a mile distant in Cayuga lake is tiny Frontenac island, where graves and pits were found[31] containing the plummet, bannerstone, notched arrowpoint, steatite and rude clay pottery with cord, fabric, and punctate ornamentation, and sundry bone implements including a fragmentary harpoon. Unfortunately the human remains were too defective to admit of measurement.

At numerous places along the Seneca river, notably on Howland and Kipps islands and at the south end of Crusoe lake in Wayne county,

[24] Warren K. Moorehead, Archeology of Maine (Andover), 1922.

[25] *Ibid.*

[26] Harlan I. Smith, Some Shell-Heaps in Nova Scotia, Nat. Museum of Canada (Ottawa), 1929.

[27] Occurs from top to bottom. (Moorehead, Smith, personal letters.)

[28] Rare in Nova Scotia (Smith, 51).

[29] Not recorded from Nova Scotia (Smith, 51).

[30] Explored by Rochester Museum of Arts and Sciences, 1928.

[31] Donald Cadzow, Prehistoric Algonkin Burial Site in Cayuga County, New York., MAIHF-IN 2, no. 1, 1925.

village and burial sites formerly existed from which amateur diggers took, without record, many hundreds of objects comparable with the types described from the Second Period.

A later phase of this period was certainly influenced by small bodies of mound-building people entering the state through the southwestern counties.[32] True mounds are known to have existed as far north and east as Irondequoit bay in Monroe county. The monitor or platform pipe of steatite, a variety of stone tube with a small orifice at one extremity and a distinctive type of projectile point having a straight stem and pointed tang link with the Adena culture, but pearl beads and double cymbal ear plugs have stronger Hopewell affinities.[33]

From Chautauqua, Cattaraugus, and Allegheny county mounds and contiguous sites, there have been recorded in addition to these enumerated objects, bar and bird amulets, tubes fully open at both ends, bell pestles, copper beads, axes and blades and barbed projectile points fashioned from Ohio flint.

Some mound sites, like that on Squakie hill, Livingston county, seem actually to have been colonized by mound people. Here were found a double cymbal copper earplug, pearl beads, broad notched flints, platform pipes and copper spears and axes.[34] The human remains, enclosed in a stoned up vault and said to have been badly decomposed, were not preserved.

Other sites, such as the great village at Vine valley, Yates county,[35] appear rather to have been occupied by Algonkins of the Second Period who were heavily affected by mound culture. The physical type is little if at all altered from that of the Backus site, although a stronger brachycranial factor may be noted.

Tubes with one partly blocked extremity, projectile points, and part of a platform pipe occurred on this site together with native copper celts and beads, the polished slate gorget, birdstone and bar amulet, ocean shell beads, hematite and stamped Algonkin pottery identical with Second Period ware from Lamoka and the coastal middens. Additional links with these consist of crude "elbow"-type pipes of clay, the "bola," plano-convex adze, triangular celt, roller pestle, perforator, bone bodkin, bone bead, drilled canine teeth, antler flaking tool, carbonized corn and beans and bones of the dog.

The mound influence may be credited for the presence in New York of

[32] A. C. Parker, History, 83–98.
[33] Henry C. Shetrone. The Mound Builders (New York), 1930.
[34] A. C. Parker, History, 92, 598.
[35] *Ibid.*, 92, 716.

Potsherds and pipe bowl from the Castle Creek site (Third Period Algonkin).

Restored pottery vessel from the Levanna site (Third Period Algonkin). Height 12 inches.

the following: the platform pipe, stone tubes, bar amulet, boatstone, native pearl beads and considerable copper in the form of axes, spears and beads.

The movements and history of the Iroquois have been treated by Parker in a series of publications[36] which monopolize the literature on this important subject. Their migration into the state through its southwest corner and probably up the Susquehanna from northern Pennsylvania brought them into contact with the Algonkin of the Second Period, and the writer believes that this influence constituted the impetus behind the cultural alterations which differentiate the Third Algonkin Period.

At the Willow Point and Castle Creek sites,[37] in the Susquehanna and Chenango valleys, respectively, near Binghamton, the transition is vividly seen in the ceramics, stone industry, and skeletal remains. The rather large skeletal collection obtained at Willow Point has been resolved into two physical blends, clearly the resultants of the intermixture of three physical types, two of which constitute the well-known early Iroquoian[38] (Proto-Negroid, dolichocranial, hypsicranial and platyrrhine with its secondary factor, Proto-Australoid, dolichocranial, chamaecranial and platyrrhine) and a third which we have shown to characterize the original Second Algonkin type as seen at Lamoka lake. Identical pottery from the graves of both types proves their contemporaneity and in itself corroborates the blood mixtures, for the Algonkin punctate style of ornamentation appears on the typically round-bottomed, constricted necked, collared Iroquois jars. This combination is frequently encountered in coastal pottery, where it has resulted in much confusion on the part of excavators, some regarding it as Algonkin, others as Iroquois. The punctate impressions, which appeared together with cord, fabric and twig brush markings on ware of the Second Period (see pl. 13), nearly exclude all others in the decorative motif of the Third Period when they occur as arrangements of rectilinear lines often in parallel groups (see pl. 15*a–c, f–h, j*) and in herring-bone patterns (see pls. 15*d* and 8). Rude attempts to copy unfamiliar Iroquois incised decorations are not uncommon on most of these sites (see pl. 15*e, f, j, k*).

Triangular projectile points, introduced by the Iroquois, who came to use them exclusively, are the principal type of the Third Period.

At Lakeside park on Owasco lake[39] (Cayuga county), and at Levanna on

[36] Parker, History; Origin of the Iroquois as Suggested by their Archaeology (AA 18: 479–507, 1916); Analytical History of the Senecas (N. Y. S. Arch. Assoc.) Researches and Transac. 6, 1925; et al.

[37] Explored 1930 and 1931 by Rochester Museum of Arts and Sciences.

[38] Roland B. Dixon, The Racial History of Man, 411–414 (New York), 1930. Ales Hrdlicka, Catalogue of Human Crania, National Museum, 1927.

[39] A. C. Parker, The Owasco Algonkian Site, *in* The Archaeological History, part 1.

Cayuga lake[40] are situated the key sites of this culture. The pottery on these sites still retains the general Algonkin form but a tendency toward constriction of the neck appears on many pots (see pl. 16). Pseudo-cord embellishment, executed with the same toothed stamp used to impress the punctate patterns, is often seen (see same pl.).

Relatively few stemmed points occur, but the list of stone and bone implements closely parallels that compiled for the Second Period and embraces: the celt of several forms, celt-like scraper, "bola" stone, pitted hammer, anvil and firestones, cylindrical pestle, shallow mortar, notched net-sinker, perforator (rare), awls (pl. 17*a*, *l*, *o*), double pointed bone implement (pl. 17*j*, *k*), bodkin (pl. 17*i*, *n*), beaver and bear tooth tools (pl. 17*f*, *g*), antler flaker (pl. 17*d*, *e*), bone bead (pl. 17*b*, *c*), the use of hematite, the dog, and the cultivation of corn, beans, and squash.

The elbow-type pottery pipe, noted in a crude form from the Second Period, reaches its acme of artistic perfection in the Third (pls. 17*p*, *q* and 7*i*).

The bone harpoon, both unilaterally and bilaterally barbed, recorded only once from a Second Period site, becomes an important implement at this time (pl. 17*h*, *m*).

There is, however, a total absence of the grooved ax, gouge, plummet, polished slates, ocean shell beads, and copper. Singularly enough, none of these articles (with the exception of ground olivella shells on colonial sites) have ever been found on a station inhabited solely by the Iroquois, who seem to have manifested a peculiar aversion for some of them.

Such sites as Owasco and Levanna show an attenuated Iroquoian culture stimulus, which must have preceded the northward advance of this people, rather than the result of actual contact through tribal movements, such as appeared on the Willow Point and Cattle Creek sites. But since no skeletal remains in these sites are yet available for study, a possible determination of blood intermixture is precluded.

The virile character of the Iroquois wrought the gradual acculturation of the more retarded Algonkin, who progressively yielded, retiring toward the north and east.

ROCHESTER MUSEUM OF ARTS AND SCIENCES
ROCHESTER, NEW YORK

[40] W. A. Ritchie, an Algonkian Village Site near Levanna, New York, Rochester Municipal Museum, Research Records, 1, no. 1, 1928.

Bone and antler artifacts and clay pipes from the Owasco and Levanna sites (Third Period Algonkin). *o* is 5¼ inches in length.

THE NATIVE MUSIC OF AMERICAN SAMOA

By FRANCES DENSMORE

ONLY one song has been published at Pago Pago, American Samoa. This song is said to have been composed by the dashing Faatui, son of the chief Amituaui-Leasuasu, and the song was first sung by a group of young men of Apia, Samoa, at the departure of the popular American Admiral Kimberly, after the naval disaster of 1889. The title is "Tofa mai feleni" ("Goodby my friend"). Many different words are sung to the same tune, both in English and Samoan, and the melody is very popular throughout the South Seas and especially in Samoa.

In the edition of the song published by E. W. Tuedner of Pago Pago the words express the regret of one who is leaving the island, the second verse being typical of the poem:

Good-bye, Feleni, my barque sails away,
Away from fair Islands where all is bright and gay,
But I'll not forget you, nor this beloved land,
When far, far away upon my native land.

Chorus:

Oh, I never will forget you,
And sadly repeat my fond adieu,
Oh, I never will forget you,
To Samoa I bid adieu.

The melody is simple and pleasing, and many have heard it as a last farewell when leaving the tropical island. Ships of foreign nations sometimes call at Pago Pago and their bands play the "Tofa song," making it seem a different piece than when it is sung or played by the Samoans. Yet the Tofa song, with its gay front cover, is the place where East meets West in a kind of world fellowship through music.

The visiting ship sails away, the navy officials resume their routine duties, the native chiefs go back to their villages, and the Samoans return to their old songs.

An inquiry concerning the native music of American Samoa was made possible by a peculiar circumstance. Lieutenant M. E. Zimmerman, United States navy, and husband of the writer's cousin, was assigned to duty at Pago Pago and consented to obtain answers to a set of questions on primitive musical customs. The answers were secured from the court interpreter and corroborated by other Samoans, every effort being made to have the questions clearly understood and the answers correctly interpreted. While

this is a circuitous manner of studying Samoan music, the result is interesting as it shows resemblances between Samoan and other primitive music.

Two sorts of songs are in use in American Samoa: (1) a crystallized melody which is repeated without change and handed down from one generation to another; (2) a long narrative or speech, sung to an improvised melody. Chief in the first class are war songs; it is also said that new songs of this sort are composed from time to time. Songs of the second class usually relate to the work in progress, to children at play, or to any other interest of the hour. It was said that "work in the field, rowing, fishing, or riding in a bus is often accompanied by song."

In reply to a question about musical instruments it was said.:

> The only native instrument now in use is a horn made of a sea shell and used by fishermen when a shark is caught. In the olden days reed instruments and drums were used. Some of the older men state that they recall these instruments but none exist on the island at the present time. It is believed that early missionaries obtained these instruments for a European museum.

The Samoans never sing solos, all their singing being in chorus.

It is interesting to note that the two types of songs used by the Samoans were found among the Filipino at the Louisiana Purchase Exposition at Saint Louis, Missouri, in 1904. This Filipino music was studied by the writer for about three weeks. A large amount of material was available, as the Filipino were singing almost constantly for the benefit of the public. Four tribes were under observation,—the Negrito, Igorot, Samal Moro, and Lanao Moro— and the songs of each were heard. In addition to songs that were clearly improvised (with and without accompaniment) there was heard a repeated melody with instrumental accompaniment, this being the Amba of the Negrito. A young Negrito who spoke broken English said they have "three songs," the Amba (an expression of happiness), the Uso (a love song), and the Undas (a funeral song). It was also said; "We make up songs about everything. We sing about the people who look at us. We sing 'how funny that fat man looks.' We make up these songs."[1]

A long narrative with improvised melody was the only form of song obtained from the Tule Indians of San Blas, Panama. The presence in Washington of a group of these people, commonly known as the "white Indians," made possible a study which would have been exceedingly difficult in their native land. Nine songs were recorded and transcribed either wholly or in part. One transcription was of a performance seven minutes in length. The nine recorded songs were said to be improvisations in both melody and

[1] Frances Densmore, The Music of the Filipinos, AA 8: 611, 642, 1906.

words, yet the singer followed a general pattern in each. There were no repetitions of rhythmic periods or long phrases in any song, but one contained a phrase of a single measure which occurred several times.[2]

The Ute Indians have two forms of song, a crystallized melody and a melodic narrative designated by the writer as "rudimentary song." The latter were long performances without a definite ending. The tones were chiefly those of the major triad and it appeared that the singer combined these according to her fancy. Yet there was a difference in the "songs" which corresponded with their subject. The story of a race between the tadpoles and the mice, and the melody said to have been sung by the prairie dogs, were rapid in tempo, with active melodic progression, while the story of the bear who stole the wolf's wife was sung to a heavier type of melody in a slower tempo. This class of song has been recorded only among the Ute and was sung by an old woman.[3] It has been mentioned in one or two other tribes but no one has been found who could sing the songs.

In the improvised songs of the Samoans, the songs of the Tule Indians of Panama, and the "rudimentary" Ute songs we have a distinct art form, the singer having a freedom and skill in his use of musical material that is not required in the repetitions of a set melody. It is to be regretted that more of these improvised songs have not been recorded, as the last person possessing the ability to sing them will soon have entered into the silence of the past.

RED WING, MINNESOTA

---

[2] Frances Densmore, Music of the Tule Indians of Panama, SI-MC 77, no. 11, 1926.
[3] Frances Densmore, Northern Ute Music, BAE-B 75: 200–205, 1922.

THE AGE OF LEAD GLAZE DECORATED POTTERY IN THE SOUTHWEST[1]

By EMIL W. HAURY

A RECENT study of pre-Columbian Pueblo pottery, particularly that from the upper Little Colorado River drainage, which has been decorated with glaze paints, has brought out additional facts concerning two contested points important to the study of Pueblo ceramics. The first relates to the time status of the lead glaze technique; the second to the value of glazed sherds as time criteria in the stratigraphic series which reflects Southwestern ceramic evolution.

The occurrences of Pueblo pottery decorated with lead glaze pigments are confined to two general areas, viz., the upper Little Colorado drainage, notably the Zuñi valley-Silver creek district, and the Santa Fé region, which includes the

> Rio Grande valley from San Juan to Santo Domingo, with the Pajarito plateau on the west and the Galisteo basin and the upper Pecos valley on the east.[2]

Because of the presence of Hodge's Type B glazed ware in Glaze I strata at Pecos, Kidder[3] is inclined to believe that the art of glaze painting developed slightly earlier in the Little Colorado focus than in the Rio Grande. The actual time status of glaze decoration, however, whether invented before the arrival of the Spaniards or whether acquired from them after their advent, has been a moot question.

Claims[4] for a pre-Spanish origin have been based upon sound stratigraphic evidence, i.e., upon the presence of glaze decorated pottery in layers of debris which accumulated about inhabited pueblos before Spanish contacts. The abundance of glazed potsherds in numerous pueblos which were wholly abandoned before the Conquest has been considered as indisputable proof of an indigenous origin for the art.

The data here given are directly contributory to the above claim and it is hoped that they will serve to amplify the existing knowledge of the subject. The present information is founded not only upon stratigraphy, but also upon the newest instrumentality for determining the age and the chronological sequence of Southwestern ruins, namely, dendro-chronology.

This method, devised and brought successfully into action by Dr. A. E. Douglass,[5] in dating the time of occupancy of pueblos long since abandoned,

[1] Published with the permission of the National Geographic Society.
[2] Kidder, 84.
[3] *Ibid.*, 95.
[4] Hodge; Kidder.
[5] Douglass, 736–770.

is a contribution of inestimable importance to the field of Southwestern archaeology. It reliably and precisely expresses the age of the ruins and the associated artifacts in a manner hitherto impossible. The unbroken tree-ring calendar extending back to A.D. 700, recently established by Dr. Douglass, has made possible the dating of more than two score ancient pueblos including such notable sites as: Pueblo Bonito, Aztec, Cliff Palace, Betatakin, Keet Seel, and Kokopnyama.

In the list of dated ruins are also two lesser known sites, the first located at Showlow, Arizona,[6] and the second at Pinedale,[7] 16 miles west of the former. Both ruins lie north of the Mogollon rim in the forested country drained by Silver creek and its affluents; both were wholly abandoned before the arrival of the Conquistadores. Excavations in these two pueblos were conducted during the summer of 1929 by the Third National Geographic Society Beam Expedition which was concerned primarily with the recovery of charcoal and wood to be utilized in tree-ring research. The correlation of the facts derived from charcoal and from the general diggings brought out points which have a decided bearing on the time element of glaze painting.

In the Showlow ruin, two distinct levels of occupancy were found to exist. That considerable time elapsed between the two was strongly suggested by difference in ceramic types. On the basis of associated datable charcoal, the tentative dating of A.D. 1204 has been assigned to the first and A.D. 1375 to the second horizons. Such dates are founded upon the year of cutting of timbers recovered from the respective levels. Cutting dates usually denote construction dates and therefore do not recognize the spatial extension of the respective horizons. It is difficult, indeed, to determine the duration of a period of occupancy when there are no breaks in the continuity of development, except where a given level is succeeded by a dated one. In the case of the two Showlow levels, it is apparent that an interval of approximately 170 years elapsed between what can be considered as two general building periods. Occupation, however, was not continuous in that part of the pueblo explored, as shown by the dissimilarity of the pottery and the absence of transitional types from the two horizons.

Excavations in Pinedale ruin indicated the fact that the major period of occupancy bore an intermediate relation to the two Showlow levels, i.e., the Pinedale horizon post-dated the earliest and preceded the last Showlow levels. In this capacity, the Pinedale occupation proved to be an indispensable connecting link, showing that there was no discontinuity in the

[6] Bandelier, 392–393; Hough, I, 301.

[7] Fewkes, 164–167.

ceramic development during the interim of the two Showlow levels. Again, on the basis of related dated charcoal, the Pinedale level is given a general dating of A.D. 1290. Thus, three culture strata, dating 1204 (?), 1290, and 1375 are represented in the two ruins, their sequential occurrence being founded upon stratigraphy and dendro-chronology. (See fig. 1.)

SHOWLOW RUIN	PINEDALE RUIN
Third Horizon A.D. 1375± Lead glaze (black only) continues on red ware. Black-on-white ware and associated glaze non-existent.	
	Second Horizon A.D. 1290± Lead glaze of black color appears on red ware. Black-on-white pottery abundant, some bearing glaze decoration not of lead composition.
First Horizon A.D. 1204± (?) Lead glaze technique unknown.	

FIG. 1. Diagrammatic correlation of Showlow and Pinedale culture strata showing relation to the development of the lead glaze technique.

Glaze decorated sherds were not encountered in the lower Showlow level. They make their first appearance in the Pinedale horizon and continue in abundance in the upper Showlow level. In so far as our collections show, lead glaze paint occurs invariably on red ware in association with a flat, chalky white pigment. There was also present in Pinedale ruin a considerable amount of black-on-white ware, some of which was decorated with a paint of distinct glaze character. Since determinations do not indicate the presence of lead as a base for the glaze, thus suggesting an altogether different type of pigment, it is discussed briefly in the later paragraphs.

The lack of glazed pottery in the lower Showlow floor of occupation is a fortunate circumstance as its time of appearance in this region is consequently limited to the period represented by the Pinedale stratum. That the beginnings of the Pinedale-Zuñi glaze development, the latter presum-

ably the oldest in the Southwest, were practically coincident is clearly shown by the fact that pottery types from the lower Showlow level are analogous to those of Hodge's pre-Hawikuh Period A.[8] Both periods antedated glaze painting but were followed immediately by it. Hodge's finds as to the relative time of appearance of the glaze technique in the scale of development at Hawikuh are thus substantiated. But almost from the beginning of glaze development in Hawikuh and Pinedale, the products were not identical; the pottery from each site assumed local variations. Glaze painting was comparatively short-lived in the Silver Creek area since this region was mostly abandoned by Pueblo people by the beginning of the fifteenth century. In the Zuñi district, occupation has been continuous from a remote period to the present time and glaze painted wares were extended into the Historic Era.

During the course of excavations at Pinedale, two rooms and one kiva were encountered which had been destroyed by fire. Numerous fragments of datable charcoal and many glazed sherds were recovered from each chamber. On charcoal fragments from the two rooms, the final rings which represent the years of cutting[9] of the trees, read from 1281 to 1290. As cutting dates usually denote actual construction periods, we may say that the two rooms in question were built by about 1290; the kiva was apparently built a few years later. The pottery found in dated rooms may be older than the rooms or it may have been manufactured long after the habitations were built if the latter were occupied over a long period of time. Consequently, much precaution must be exercised in a final interpretation from such evidence since the circumstances of association are of the utmost importance. In the present case, because of the fact that the Pinedale level was preceded and succeeded by known culture strata, little doubt remains as to the age of the Pinedale glaze painted ware. Evidence to the effect that the three burned rooms were not occupied for an excessive length of time was found in the total absence of pottery types belonging strictly to the upper Showlow level.

The Pinedale glaze is almost exclusively of black color. Green glaze seems never to have been made locally, although a few sherds bearing such paint were found. Because of their general dissimilarity to Pinedale pottery, they were considered intrusive, undoubtedly coming from Hawikuh where green glaze was prevalent. A flat white paint is usually associated

[8] Hodge, 29.

[9] There are several reasons for believing that the ancient pueblo builders preferred green to dead wood when a timber supply had to be cut. Hence, on a tree felled while growing, the first ring beneath the bark signifies the year of cutting.

with the black glaze on bowl exteriors, seldom on interiors. The glaze producing paint was not so easily applied as the flat colors to which the potters were accustomed. This resulted naturally in inferior designs, although in Pinedale pueblo the decoration never degenerated to the point exemplified in later Zuñi and Rio Grande vessels. The paint varies in degree of opacity, sometimes appearing quite translucent. It usually assumed slight relief and tended to run on firing. Frequently minute gritty particles may be detected in the paint, which impart a rough surface.

Not all of the red pottery at Pinedale is decorated with glaze paint. On some vesels the pigment is dull and flat, on others it shows incipient glaze qualities, and on still others it appears as good glaze. All vessels are technologically the same and unquestionably of local manufacture. This fact may be considered as further argument that glaze paint was either introduced or developed locally during the time represented by the Pinedale horizon.

To ascertain the basic constituents of the Pinedale glaze, sample sherds were submitted to Mr. F. G. Hawley[10] for qualitative analysis. The results of individual determinations of the glaze appearing on eight vessels showed lead to be present in greater or lesser quantities in each case. Copper was also invariably present, and usually traces of manganese. A composite test of the paint on 12 sherds indicated the average ratio of lead to copper to be about 1:2, although in single tests the ratio obviously varies. The actual functions of the main ingredients are understood well enough. Lead is present in the form of a silicate which produces the glaze; copper, manganese, and impurities impart the black color. To attempt an explanation, however, of the methods of compounding these elements and their form when used, would be wholly conjectural and consequently of little value.

Fifteen separate tests in Pinedale ruin revealed that glazed red ware and black-on-white pottery were coexistent, the latter being apparently of Upper Gila affinity. The two ceramic types were present in about equal proportions. These finds do not agree with Hough's observations[11] that glaze decorated wares "are frequently associated with colored wares but never with black-on-white." The above association of the two types may either signify that black-on-white survived later or the glaze technique was developed earlier than has hitherto been supposed.

The black glaze already alluded to as occurring on some of the black-on-white pottery from the Pinedale stratum appears superficially to be

[10] Chief Chemist, International Smelter, Miami, Arizona.

[11] Hough, II, 247.

much like the glaze paint on red ware. In the best examples it is extremely glossy but shows very little relief. It may be translucent or coal black and opaque and is quite free of gritty particles. Prior to an analysis, it was thought to be basically the same as the glaze on red ware, but tests indicated an altogether different condition. The anticipated lead and copper ingredients were totally lacking; instead, the principal elements were iron, manganese, and apparently carbon, none of which could impart the glaze character. This latter trait is undoubtedly due to the presence of a readily fusible silicate, such as sodium.

The present interest lies not so much in a determination of the exact properties of the pigments, or in the possible ways in which they were prepared, but in the fact that two dissimilar types of glaze paint occurred contemporaneously for a brief period at about the close of the thirteenth and beginning of the fourteenth centuries. The glaze on the black-on-white is undoubtedly the older of the two, as an antecedent phase was recognized on the black-on-white of the lower Showlow level in the form of a thin shiny paint. Its development culminated in the Pinedale stratum, as black-on-white and its related glaze did not survive into the upper Showlow level whereas lead glaze did. The question arises whether or not the glaze evidenced on the black-on-white served as a stimulus for the lead glaze development.

The time status of the glaze technique is also clearly manifested in Showlow ruin. It appears on red ware which is different than, but directly derived from, the red ware phase represented in Pinedale ruin. In 13 rooms of the upper level of occupation, all of which were apparently constructed by 1375, glaze decorated pottery was consistently present. Two other habitations of the same culture level, but dating 1383, also contained glaze-decorated pottery. It is to be remembered that this ware was not of an exotic order but the dominant type, composing 75 percent of the entire amount of sherd material recovered. Considered collectively, glaze-painted pottery was associated in 15 dwellings with charcoal and wood, none of which registered a cutting date later than 1383. Evidence points to the fact that the pueblo was totally abandoned soon after 1383, undoubtedly a full century before Coronado's arrival at Hawikuh, less than a hundred miles distant to the northeast. Consequently, claims for a post-Spanish origin for lead glaze are out of accord with the present findings.

In so far as our sherd collection shows, the Showlow glaze is always an opaque black, applied on red slipped ware and outlined with white. Where thin, the glaze usually has a metallic luster; where thick, it tended to become dull and vitreous. Apparently the amount of paint present, the length

of the firing process, and the intensity of the fire, were modifying factors in the final appearance of the pigment. The paint is generally more gritty than the glaze from the Pinedale level.

Qualitative determinations again showed lead and copper to be the main ingredients, practically the same ratio of lead to copper obtaining as was noted in the Pinedale glaze. There seems to have been no great departure in the method of compounding the pigment, if such was the case, over a period of approximately 100 years.

The use of glaze in any form and especially as an entire surface coating is generally associated with people who used the potter's wheel. The ancient Pueblo potter never attempted the use of glaze in the capacity of a surface covering, applying it solely as embellishment; nor did she use a wheel. These two factors are of singular importance as they further attest a native origin for the art. The very use of glaze paint in the Southwest at an early time provides an uncommon example of the invention, the development, and the degeneration of the lead glaze technique by a non-wheel using people.

In summarizing, it is allowable to assert a pre-Hispanic status for lead glaze painting on two grounds: (1) its occurrence in two culture horizons in Showlow and Pinedale ruins stratigraphically anterior to the beginning of the Historic Era in the Southwest; (2) its association in both levels of occupation with datable charcoal of which none has registered a cutting date later than 1383. The abundance of pottery bearing lead glaze decoration in the 1290 level at Pinedale is a decisive indication that glaze painting was known fully two centuries before 1540. Consequently the lead glaze technique must be placed in the category of indigenous rather than accultural traits of the Pueblo Indian.

Bearing this in mind, together with the fact that glaze decorated wares were not widely distributed, the value of glazed potsherds becomes evident. Their importance is twofold: (1) Since the art of glaze decorating was of short duration, beginning, in the light of present information, about 1250 and yielding again to the dull paints soon after the arrival of the Spaniards, as has been shown by other investigators, the presence of glazed sherds in ruins is an unmistakable indicator of a very definite time in the history of Pueblo pottery development. (2) Such sherds found in ruins outside of their related culture area show contacts with the regions in which glazes were characteristic. As a concrete example of these two points: The presence of glazed sherds of a type dominant in the Silver creek drainage about 1375 in the upper layers of a trash mound at Casa Grande, as reported by Glad-

win,[12] is indicative not only of trade relations with a sub-culture ceramically distinct from Casa Grande, but also that Casa Grande, at least in part, was occupied without question as late as the last decades of the fourteenth century.

GILA PUEBLO
GLOBE, ARIZONA

BIBLIOGRAPHY

BANDELIER, A. F.
Final Report of Investigations among the Indians of the Southwestern United States, part 2. Papers of the Archaeological Institution of America, American Series, no. 4, Cambridge 1892.

DOUGLASS, A. E.
The Secret of the Southwest Solved by Talkative Tree Rings. National Geographic Magazine, 66: 737–770, 1929.

FEWKES, J. W.
Two Summers' Work in Pueblo Ruins. BAE-R 22:3–195, part 1, 1904.

HODGE, F. W.
Circular Kivas near Hawikuh, New Mexico. MAIHF-C 7, no. 1, 1923.

HOUGH, WALTER
I. Archaeological Field Work in Northeastern Arizona, The Museum-Gates Expedition of 1901. USNM-R for 1901: 279–358, 1903.
II. The Lead Glaze Decorated Pottery of the Pueblo Region. AA 30: 243–249, 1928.

KIDDER, A. V.
An Introduction to the Study of Southwestern Archaeology. Papers of the Southwestern Expedition, no. 1. Published for the Department of Archaeology, Phillips Academy, Andover, Mass. by the Yale University Press, New Haven, 1924.

THE MEDALLION
The red-on-buff culture of the Gila Basin. Pasadena, 1929.

---

[12] The Medallion, pl. 5.

THE FIRST SALMON CEREMONY OF THE KARUK INDIANS

By HELEN H. ROBERTS

SOME years ago a paper appeared in this journal[1] on the general practice of holding a first salmon ceremony by the aborigines of the Pacific coast regions from north central California to Alaska. Because little information has been given on the ceremony as performed by the Karuk living along the Klamath river in northern California, the data on it, secured during a field trip there in the spring of 1926, may be of interest, even though publication has been delayed several years after it was written.[2] Unfortunately the ceremony in its completeness has almost ceased to be, so that in that year no chance occurred to observe it in operation, but two quite old informants were willing to talk about it. Both were women and both declined to impart the knowledge to any male investigator. It is true that they had never served as medicine men, nor had they ever actually been present at the "making of the smoke," but both were born and raised in the immediate neighborhood of the sacred place on the river bank where the ceremony was performed, now known as Ike's place, and both were wives of medicine men. No. 1 had had considerable fortunate and pleasant contact with whites. She proved a friendly and valuable informant and gave the first information about the ceremony, but the Karuk mercenary instinct was strong in her and for various reasons it was felt desirable to have confirmation of her tale.

No. 2 agreed to tell what she knew of the ceremony on learning that I already had secured considerable information regarding it. She came with the full consent of her husband, but with the understanding that I would not divulge the facts to their tribesmen. They seemed to be a devoted old couple, he being a man of no little good sense. As we were sitting talking quietly together, she remarked that when her husband was medicine man for the salmon ceremony she had known just what he was doing. He had told her all about it, quite, it would seem, as men have been wont to do, at least from the time of Samson to the present day.

Apparently, however, it is impossible for such informants to tell a story logically. They jump *in medias res*, then back to the beginning; they may digress and so get ahead of the story and be obliged to retrace their steps. The two accounts I have of the ceremony substantially agree, although that

[1] Erna Gunther, Analysis of the First Salmon Ceremony, AA 28: 605–617, 1926.

[2] The field trip was made at the expense of certain public-spirited citizens, to whom acknowledgements are due. They are: Mrs. Maurice Werthheim, Cos Cob, Conn.; Mr. William Templeton Johnson, San Diego, Calif.; Miss Pearl Chase, Mr. Henry Eichheim, Mr. Harold S. Gladwin, Mrs. Frederick S. Gould, Mrs. Bernhard Hoffman, Mrs. Katherine Hooker, Mrs. F. W. Nordhoff, Mrs. Mary Upson, all of Santa Barbara.

of No. 1 leans toward magical rather than commonsense explanations, while that of No. 2 is the reverse. There is much which No. 1 evidently did not know. Both accounts are sadly jumbled chronologically, but it is quite easy by carefully editing them to put them in order without fear of error. Since they do pretty well agree, I have combined them so as to give a clear idea of the whole procedure, merely noting differences in incidents, but at the last I have had to leave the reports distinct. There are some evident gaps in the account, perhaps more than appear on the surface, but from what is given it is possible to gain an idea of the main features of the ceremony.

Any one of the propitiatory ceremonies for increasing the food supply, for driving out disease, or for procuring a mild winter is known as a pɪkyávɪc among the Karuk. Several of these pɪkyávɪc are held during the year, or were formerly, that for the salmon being quite different from that for the deer, not similar to it, as the author of the paper above referred to remarked, on the basis of information given by Powers.[3]

The avowed purpose of these pɪkyávɪc was to remake the world, that is, to replenish it. The salmon ceremony was for the purpose of making lots of salmon, as No. 1 put it. The formal name of it in Karuk is Ṣar'ʊktŏā'mwat[a] which means "to eat down by the river," but it is also known by the general name of Amai'kiār'am pɪkyávɪc, Amai'kiār'am being the name of the locality on the Klamath at Ike's Falls where the ceremony was held. This term is applicable not only to the ceremony proper but to the dances and good times which followed it. No. 1 pronounced the word Amvaí-kiār'am, interpolating a very slight *v* sound, and with her, as with others, the diphthong ai tended at times more nearly to ei. Strictly speaking, Amaíkiār'am is across the river from Ike's, and the name designates not only the immediate bank of the river but the hillside for a considerable distance above. Less exactly, however, it has also come to mean the bank where Ike has his home and the spot down by the water where the smoke-making actually occurred.

So far as I learned, the selection of a medicine man was not a specially formal matter. His duties were somewhat arduous, his period of semi-fasting long, and probably for these reasons it was the custom to pass the honor and onus of office to different men from year to year. The willingness to serve and the decision of the men of the tribe as a group as to his suitability were the factors determining his selection. This somewhat informal method of choice appears to have grown considerably in recent years with the waning strength of a faith which once made the assuming of physical hardship im-

[3] Stephen Powers, The Tribes of California, CNAE 3: 56, 67, 1877.

perative. Nowadays but few old men care to endure such rigors and the difficulty of finding volunteers has probably had no little to do with the abandonment of the ceremony. In fact, No. 2 remarked that in the old days no one was paid to do it, although that is now a common practice.

The man who assumed the office was called for the time being the Eχ'ɛnɛ́'evā'ṣθan. No. 1 did not know the meaning of the name. Apparently it has some connection with one of his duties, the cutting of wood, which will presently be described. The Eχ'ɛne'evāṣ'θan (who hereafter will be designated as the E. for convenience) had a self-appointed helper known as the Ṣar'ʊk'i'rui'ciī'han or, as No. 2 had it, Ṣar'ʊk'i'rui'cirī'han (hereafter to be known as the S.). The translation of this name appears to be "down by the river (he rolls it?)," ṣárʊk meaning "down by the stream," but the rest of the word untranslatable except as a whole. Ordinarily viʊt means "to roll." No. 1 said in response to a question that if the S. were not acceptable to the people they quite frankly made it known and selected someone else. There was never any quarreling about it but she thought a rejected man would go away and keep his resentment to himself.

On the side of the river opposite Ike's place, at the true Amaíkiā'ram, were two special sweat-houses in addition to that occupied by the men of the tribe in general. One of these was for the E. to dwell in during the month, or less, immediately preceding the actual ceremony of the making of the smoke, which was called Ṣar'ʊk'ām'kʊf or Ṣar'ʊk'āmkof (Ṣar'ʊk, down river, ām'kʊf, smoke). The name of the E.'s sweat-house was ɩkχarē'yaik-mahátciram, ɩkχarē'yav[5] being a term somewhat comparable to waka'nda or ma'na, supernatural power. Mahátc seems to convey the idea of small, while ram is a suffix attached to many words and denotes a place, or perhaps better, a station, so that the entire word appears to mean "the small lodging place of supernatural power."

When the E. entered the sweat-house about the first of March[4] there were no salmon running in the river, but from the time that he entered more or less close watch would be kept by the men of the tribe for the return of the fish, although no watchmen were specially stationed. For the most part, the E. remained in the sweat-house where the men of the tribe might visit him and talk with him but not the women. The men used to sing songs to keep him awake, so No. 1 said, but she did not know them. She remarked that the men nowadays had given them up because they were so hard but that in the old times there was a regular school where they were learned.

[4] There seems to have been no fixed time. According to No. 2 he might go in only a week or ten days before the time for the ceremony, but evidently the interval of incarceration was longer formerly.

Each day the E. went out on the mountainside and cut a pole with a stone knife. According to No. 1 this part of the ceremony was called Eχ′ɛnɛ́'evā′ʂθan. He brought it down and set it up outside of the sweat-house. She declared that thousands (!) of poles lay rotting outside, for the E. never took them away, and she did not know why he cut them except that in the old days when all the animals were people they did that and so he followed precedent. Many of the reasons for certain procedures of the Karuk, especially in regard to ceremonies for increasing the supply of food animals, are referred to this mythical time. No. 2 said that the poles must be of madrone wood and that they were more properly sticks and were laid against a pepperwood tree outside of the sweat-house. For the ensuing year none might touch them but when the next E. took office he used this wood for the fire in his sweat-house and cut more for his successor. It was not true that thousands of poles lay there rotting. None but those left by the last E. remained by the tree and at most there could not be more than thirty or forty pieces.

After cutting the wood, which became somewhat of a task as the E. weakened with hunger, he had to bathe daily in the river and at this time prayed that there would be plenty of salmon. He employed old words, not the current language. For instance, the word for salmon, inayār′e, would be substituted for 'ā′ma', which is the common term today. He prayed after this fashion:

Yan′tcɹp	t!ai′	vʊr′ahɛc	inayā′re.
Next time	large	be	salmon.

The first of the salmon that appeared in the run were designated ɹcia′t! meaning "early in the spring salmon."

Once a day, about noon, he partook of food prepared for him by his wife or other female relatives, or failing them, friends. It consisted of acorn mush, nowadays eaten with a wooden spoon but formerly with one made of elk horn, and salmon preserved from the previous season. For his meal he repaired to his own home or the one where the food was prepared, the S. shouting to all within earshot to keep silence while he ate. It was the duty of the S. also, apparently, to keep the E.'s special sweat-house clean and neat and to tend the fire.

The E. remained in the sweat-house waiting for the rush of salmon. When they were finally seen the men of the tribe began to fish for them. No. 1 said that not very many attempted to fish or to touch them because they were afraid, preferring to wait until after the fire and the ceremony which made them free to all the people. It seemed that no matter how many

were running in the river or how hungry the people were, a very strong fear of eating the salmon existed until removed by this ceremony. As No. 1 expressed it, the good old people who belonged only to the neighborhood appointed themselves to fish for the first salmon (that is, those who were conscious of tribal dignity and leadership). Before the ceremony the salmon were called ɪcia'tl but ten days later they became 'ā'ma' and safe for all to eat.

Ten days before the first of the moon when the ceremony was to occur, a woman of the tribe, agreed upon as proper for the part she was to take, entered the second of the two sweat-houses already mentioned, kept for her, where she must remain in comparative seclusion until the day before the ceremony. She and her lodge were both known as the ahʊ'p'ɪkiáwan. Only the S. was allowed to enter it and converse with her. At once she assumed the duty of cooking for the E. and the S. who had hitherto been cared for by their female relatives. A long time ago, according to No. 2, all women were ready and volunteered their services and any might be selected. The people did not have to hunt as now to find one willing to do this.

In the meantime the fishermen had been catching salmon. When the first was caught, No. 1 said that none would touch it until after bathing. If many were fishing all bathed in the river. No. 2 did not mention this feature, but said not many fish would be running at that time and that the men fished for several days beforehand so as to be sure to have at least one ready. Any that were caught before the day of the ceremony were killed and kept on the sand in the shade, close to the water, not brought up to the village. In answer to inquiry she said the fish did not spoil although they were not cleaned. She had never seen them there but had often heard that they were so kept. Anyone might fish right up to the day of the ceremony, there being no special number of men. The freshest fish was reserved for the rite when the men were ready to quit, and the fishing was done on Ike's side of the river where the ceremony was to occur. The man who caught the last salmon took it to the spot where the fire was to be made and left it there. According to No. 1, the day just before the first of the moon was when the men made an effort to catch the biggest fish. She stated that the largest salmon was used for the ceremony and was brought up to the house where the E. usually ate and that the S. carried it across the river when they went to perform the ceremony. There may have been a difference in practice from year to year or the people may have fished on both sides of the river. If the men on Ike's side failed to catch any, possibly one might have been carried over from the other side.

On the day before the new moon, the woman or ahʊ'p'ɪkiā'wan (the A.

as she will hereafter be designated) had to procure the wood for the ceremonial fire. (The entire account of the woman and her activities was given by No. 2. No. 1 omitted all mention of her.)

The wood must be madrone (kʊṣrᴛ′p! an aχará, madrone dry). Some of the men of the tribe not staying in either of the sweat-houses were ready to take her in a canoe across the river to Ike's side. She departed in silence and did not speak until her return. She was the only woman allowed around the spot where the ceremony was to be held. After she landed, the boatmen did not wait for her reappearance with the wood but recrossed to the Amaíkiā′ram side. The woman carried with her in a pack basket slung on her back two wedges made of elkhorn about seven or eight inches long, called parā′mwarᵃ, and for a maul the tak′ᵘnʊ′rɪs, a pestle-shaped rock with a stricture in the center forming the grip. Although two wedges were carried, only one was used unless the wood selected proved too tough to split, when the second was employed to assist the process. The woman climbed up the mountainside looking for a dry madrone tree and when she had one to her liking removed the bark so that the big cracks in the body of the tree were disclosed. The tree selected was just large enough for her to reach around with the two hands. After removing the pack basket from her back, she took out a wedge and the maul. From the time she placed the wedge in a crack she was not supposed to breathe, until by hitting it with the maul she succeeded in splitting off two pieces of wood. So she first selected any easy place and had all in readiness before taking a deep breath. If she should breathe before splitting off the two pieces there would be no salmon, but having secured them, she might take her time and accomplish the rest easily, breathing when she liked. She continued chipping until she felled the tree. Then, beginning at the end, she split off chunks from side to side until it was all worked down into small pieces. Every bit must be utilized, even to the finest ends of the limbs with which the E. was to start the fire. After it was all split up and packed in her basket she loaded it on her back and descended to the sacred spot where the fire was to be built. There she left it. The canoe men who had been watching for her return crossed to fetch her. She reentered her sweat-house and did nothing until the next day except to give the E. and the S. their meal. There is some difference in the accounts here. No. 2 said that neither E. nor S. partook of any food the day before the ceremony, but in another place, discussing meals afterwards, she said that they had not eaten since the night before it occurred.

Early in the morning of the day of the ceremony the women and chil-

dren living on either side of the river moved way up the mountainsides. That day none might eat at Amaíkiā′ram, man, woman or child, not even the E., S., or A. Even the people as far away as Kat′′ emi′ⁿn joined those living at Amaíkiā′ram in the general migration to the place called I′rurā′-wɪcⁱríhirām. Men not immediately connected with the ceremony could remain at Amai′kiā′ram but might not eat there. Probably five or ten such men would remain. They would shout in the early morning for the rest to move up the hill.

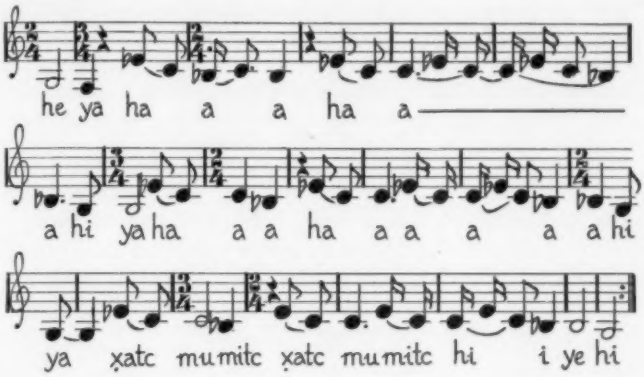
Some of those who had been in the habit of visiting the E. in his sweat-house then informed him that the fish was ready. Some of them started to "mark" the E.—that is, to paint him for the ceremony. His body and all over the face, his arms and his legs, were painted red. A black mark was drawn from ear to ear across the nose, about the width of a finger. That was all. No. 2 said the red rock (ochre?) which was used for the paint was obtained way up the Klamath and that the black paint was made from bear or deer grease mixed with soot taken from the sweat-house.

The S. was also painted red all over but had a horizontal line across his chest from armpit to armpit and three rings of black on each arm, one at the armpit, one at the elbow, and one on the forearm near the wrist. He also had a black ring on the calf of each leg but no marks on his face. Each man wore only an apron of buckskin but No. 1 added that the E., at least, wore a mink skin on the head and one eagle tail feather standing up at the back of the head. She said that the E. was barefooted. His hair was gathered in a knot at the nape of his neck and tied around with a piece of hand spun Indian twine and the feather was stuck upright in it. The buckskin was tied about the hips with a piece of string.

The woman anointed herself a little with marrow from the leg of the deer or any other bone, on her face, chest, and arms. She dressed her hair by parting it in the middle from the forehead straight over the crown of her head to the nape of the neck, drawing the hair to either side over the ears and folding it into a series of loops which she tied near the center with strips of buckskin. She wore a dress of buckskin ornamented with pieces of abalone shell tied on which struck together as she moved and so informed persons of her coming.

The E., his helper, and the woman remained in the respective sweat-houses until the sun was midway between rising and setting, a time known as ṣu′paha'ā′tcɪp (midday). When the men were ready No. 2 said they started to sing as a notice that they were about to depart. Only the E. and the S. sang.

SONG 1. SUNG BY THE MEDICINE MAN BEFORE CROSSING THE RIVER TO MAKE THE SALMON SMOKE.



When they had finished they went out of the house to the canoe to cross the river. The E. carried under his right arm a bag containing the two sticks for making fire (ṣɪmyʊr′ɪcríhar), some Indian tobacco (ihē′ráha), the medicine he would cook the salmon with (máhᵃā′nawᵃ), his pipe (úhurām), and a yuhírɪm or knife with which to clean the fish. The knife was made of flint (ṣā′ᵃk). No. 2 said that the bag was made from the skin of a river-dwelling animal called ṣápíhinⁱ′tc, now extinct. The skin was not slit the length of the animal but across the thighs to make the opening of the bag, and the mouth was sewed shut. Lacking such a skin, others might be used. According to her, the bag was called wⁱk′ⁱa′po and was carried under the right arm by a strap passing over the left shoulder. No. 1 stated that the bag was called wɪk′ǃʊpᵘest′ and that it was made of some sort of straw and sticks, very old. She said that bags of the same sort were used by the Orleans Bar, Somes' Bar, and Happy Camp people. Possibly each E. used whatever bag he had. The S. merely carried his pipe.

No. 1 also stated, contrary to No. 2, that the E. and the S. left early in the morning to cross the river, when it was just beginning to grow light, as soon as the sun reached the top of the ridge. They went without eating. It did not make any difference how high the river might be or how difficult the passage. They went anyway. Ordinarily the E. did nothing but sit in the boat and protect his buckskin garment and his bag from the water, while the S. paddled, but if the water was high and the going difficult, the E. might lend a hand. The woman, according to No. 2, remained behind in her

sweat-house and hid her face after closing the entrance tightly. From the time that the two men left the sweat-house they were supposed to maintain absolute silence. It was thought that if they spoke they would not live long. (No. 2 had two sons, both of whom talked when performing the ceremony and both are now dead.) They landed on the opposite bank at a point quite a little above where the fire was to be made and proceeded down toward Ike's until they reached a certain big rock. Here the E. removed some of the Indian tobacco from his bag and scattered it broadcast, a little in each direction, some toward the water, some up-hill, etc., but not to any special number of directions nor any special number of times. (Only No. 2 mentioned this and the points immediately following.) After having done this, he and the S. climbed over the top of the rock in front of Ike's house, and went toward the river over a special trail to the rock mound place where the fire was to be built. No. 1 gave the name of this as Wʊ′rɑciak, stating that it was at the ranch called Acā′namka′rʊk. No. 2 alone said that here the E. left his bag beside the waiting salmon and that both he and the S. went to the river and bathed. When they returned, the E. made the fire. She said that the S. watched him make it but No. 1 declared that in all their proceedings whoever was not working hid his eyes and covered his face. Both informants agreed that they did not speak. No. 2 thought that the E. might breathe while making the fire with the firesticks but that when the S. cut up the salmon he must not breathe. No. 1 said that no songs were sung, and No. 2 did not mention any. From here the accounts differ considerably, so I will give both.

No. 1's account.—The S. cut up the salmon with a flint knife, first cutting off the tail. He put that down and said to himself ("just thought it") "ip′ɬʊn" (tail). Then he cut the back and said to himself, "át'c"; then the fat breast and said, "t ɬak′vaɣ," and then the head and said, "áɣavá'a." He had placed them in a row, and then picked each up in order, to cook it while the E. sat down and waited. The S. speared each piece with a stick which served as a spit, one end of which was driven into the ground in front of the fire. It was turned as required. When the ip′ɬʊn was done, the S. ate it but could drink no water and might eat nothing else. If he consumed as much as half of it he was lucky. But it was fat salmon and would not taste very well. Some of the men who had been S. could eat only one bite. It was claimed that if the S. could eat a whole one he would be rich all his life but none could do it because the fish created a thirst and the S. might not drink. He must cook the whole fish, however. The E. kept his buckskin over his eyes and did not watch the S. eat but he did smoke his pipe. What the S. could not devour he laid in a pile. Then he picked up a little stone and

hit the E. with it and then sat down and covered his eyes while the E. arose and jumped around but did not talk. The E. put more wood upon the fire and the cooked salmon was laid upon it, together with roots of all kinds the E. had in his bag, which were used to make medicine. The burning mess had a horrible smell. (No. 1 went there once and she knows!) While this medicine was being made, the people up on the hillsides dared not look down on the smoke ascending to the sky. All up and down the river the people hid their faces. They smelled the smoke a long time until in the evening. This ceremony was called medicine-smoke, şar′ʋk'ā′mkʋf.

The S. hid his eyes while the E. burned the remains of the salmon and when it was done the E. hit him with a small piece of stone and they prepared to go home. Neither had seen what the other had done. They went back over the path and climbed into the canoe, the E. carrying his bag. The S. propelled the boat home and then No. 1 said it was just as if they did not do much any more—as if things were all over. The E. returned to the sweat-house and the S. accompanied him. If he hoped for luck the S. ate no supper but the E. could have a meal of acorn mush and dried salmon, which the A. prepared. The other fish, which were caught before when the men were fishing for the salmon for the ceremony, were dried. They were also called ɪcia′t! This fish was forbidden to most of the people for ten days thereafter. They were afraid to eat it, but those who were not afraid would do so as if it were some sacred big thing, and would serve it in a special big stone dish. Such would be the important and good old people of the tribe.

After his supper the E. returned to the sweat-house weak and tired. From the time that the ceremonial fire was made he was allowed two meals a day. The S. went without his supper but the next morning he could have breakfast. Both men remained in the sweat-house for ten days after the ceremony, waiting for the dances. They were not allowed to eat any of the fish that were being caught in the river until after ten days had elapsed. They would count off the time as the Karuk did, on the fingers of the two hands. Thus, they would say:

1—yis′θa, counting the little finger of the left hand
2—a′χhak, counting the fourth finger of the left hand
3—kʉy^{w}rā′k, counting the third finger of the left hand
4—pī′s, counting the second finger of the left hand
5—trop, counting the thumb of the left hand
6—ī̃kri′vɪk^{i}, counting the thumb of the right hand
7—χakinī′yɪk^{i}, counting the second finger of the right hand
8—kuyurʋ̄′kɪni′vɪk^{i}, counting the third finger of the right hand
9—tropatɪc′ā′mni, counting the fourth finger of the right hand
10—itra′hiɛr, counting the fifth finger of the right hand

Note: All the r's in these words are rounded into a dull trill.

At the end of the first five days it was allowable to cook the salmon, ɪcia′t!, which the people had been catching during this time. Before this it was forbidden to boil the fresh fish. One woman, the oldest in the house, cooked them with hot rocks and water (i.e., they were boiled). The smoke ascended. Then all the other people went away so as not to see the steam. The one woman who cooked the fish never looked up. She did not have a special fire. She and those of her family could eat this salmon but the E. did not receive any of it.

No. 1 added that the fishermen felt that they just *had* to catch salmon during those five days. Their whole future in fishing depended on their success at this time. If they did not succeed they were out of luck. At the end of the fifth day some of the family which had partaken of the cooked fresh salmon would take one salmon from Ike Falls (Amaíkiā′ram) raw and whole and give it to the oldest people down at Orleans Bar. The young people kept away from it. They were afraid to eat it, believing that evil would ensue, such as snake bite, a hurt, a burn, etc., perhaps even death. The old people, however, were very glad to receive the salmon and eat it. Then the Ike Falls people went back home.

No. 2's account.—When the fish was brought to the place where the fire was to be made, it was laid with its nose close up against a stone at right angles to the axis of the body of the fish. It was thought that if, when the S. cut it up, the head slipped past either end of the rock or if it lay so that the head projected beyond the rock at either side, the main part of the salmon run would slip past Ike's Falls unnoticed by the fishermen and only be discovered far upstream. First the E. made the fire. Then he sat down upon a rock. Formerly a special rock there served as his stool, but that is gone now. He placed his pipe which he had with him down on the ground beside him and folded his arms across his knees and watched his helper. He did not cover his face nor close his eyes. The S. then cut up the fish. It was handled on the fire with two madrone wood sticks or pokers called şap′·ık which had been cut by the woman who procured the wood for the fire. It was cooked by being laid right on the coals. The tail piece was cooked first, and then carried by the S. and placed beside the E. on another rock. The belly part was not cooked at all but laid on a rock on the other side of the E. Part of the back was left adhering to the head and that piece was cooked last. The S. did not attempt to eat the fish until the E. himself pointed to him and to the fish and motioned him to do so.

In the throat of the salmon, where the tonsils of a man would be, is a piece resembling a heart which No. 2 says is the heart of the fish (tiuık′!i-nu′pătc). This the S. ate first. A little farther down in the salmon is another

piece (at′ᵘwaf) said to be the liver. The S. ate that next. Sometimes he did not like eating it for it is bitter, but he had to eat it. Then, if he did not want the rest of the fish he need not eat it but this much he must devour. This liver is so bitter and nauseating it is likely to make a man vomit. If the S. did so it was thought he would be lucky in future. On the other hand, while eating it might make him very sick, he might not be able to vomit and then he knew that he would be very unlucky.

That part of the fish which he could not eat had to be put on the fire and burned, together with the roots which the E. brought over in his bag. These roots might have been gathered by anyone, possibly a long time before, not necessarily just before the ceremony. They might have been kept for years. Just one variety of root was taken called Ma′hᵃā′nawᵃ. Anyone who possessed some would give it for the ceremony. It could be gathered only on the ridge called Ma′hᵃan′·ehᵘwīn′·am, beyond the mountain which has the rock slide that may be seen from the falls. The pieces of roots were laid on the blaze in chunks as they were gathered, not ground up or worked over with other materials into a medicine. The roots were never used for any other purpose than for the salmon smoke and No. 2 did not know how the Karuk ever came to select them for this purpose. Burning them with the salmon created a dense smoke and while it was in the air no one might look. In fact, during the day the constant admonition had been:

ṣar′ʊk	ā′mkʊf	χai′fat	im·ī′stⁱ.
Down river	smoke	don't	look.

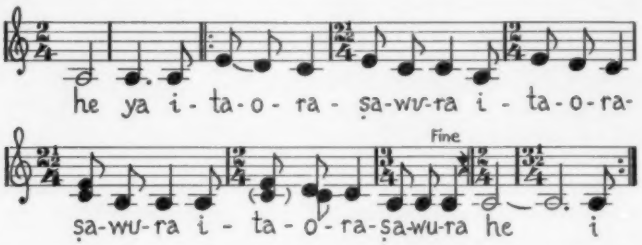
This rite of burning was called ṣar′ʊk′ām′kʊf. The E. and the S. might both look at the fire but neither was supposed to look up at the ascending smoke. As the roots and fish continued to burn the smoke column soon became deflected and followed along by the river, hanging low right over the water. After the river was all covered over this smoke would drift back to the fire and then follow in one small line down the river until it had all disappeared.

After some time the fire ceased to "burn up quick," and before it all burned out the E. and the S. started to bury it under a rock mound such as was mentioned as being at the spot when they arrived. The men built the mound on top of the fire. The smoke would escape from it in puffs or clouds if they did not wait until the fire burned down. All charcoal and any traces of the fish must be completely covered. As soon as the mound was completed the two men were ready to start home. The E. carried back with him what tobacco was left. He did not use it for any other purpose at any other time and it would be kept until the next year. He did not take back any roots, however, for all of those were burned.

They returned to the sweat-house, and on their arrival stamped their

feet so that those men who had remained in it would hear them and know that they had returned from their mission. Then the men who were waiting inside began to sing.

SONG 2. SUNG AT THE RETURN OF THE MEDICINE MAN AND HELPER AFTER BURNING THE SALMON.



(This song is repeated ad libitum but "not very many times,"—"two or three.")

The S. could thereafter sing that song at any time within the next day or so but no one else might. Usually he would sing it only two or three days but there was nothing to prevent his singing it continually if he so desired. When the men finished the song they emerged from the E.'s sweat-house and the E. and the S. entered. When they were safely inside any one of the men who had been in the sweat-house shouted:

Tcɑm′·i kīk′! pa′wiyi′hʋk·i′.
All right you can come back.

And then the people who had spent the day up on the mountainsides came down on both sides of the river and returned to their homes.

While the men had awaited the return of the E. and the S. from across the river they had not been idle. They had taken arrowwood sticks and shaved them with sharp mussel shells until they had accumulated a big pile of shavings. These were used by the E. and the S. immediately on their entrance into the sweat-house, to remove the paint from their bodies. The shavings were then carefully gathered up by the E. and put into his bag although he might at this time give away some of them to anyone who might request them if he felt in a gracious and generous mood. The recipient would use them as magic medicine in trapping during the next winter. If the E. did not wish to give any of the shavings away, custom did not demand that he should. The remainder of them were supposed not to be touched by anyone until the following year, and then the man who became the E. removed them from the bag and hid them out in the brush

somewhere. Each year the E.'s bag and equipment were handed on to his successor, including the firesticks, the pipes, tobacco, etc.

If any salmon caught before the ceremony were not taken away from the fishing ground the people went down at this time to get them. If puffs of smoke were still escaping from the rock pile across the river there was no harm at this time in looking, for the fire was no longer āk!sʊn'wa. The salmon is no longer ɪcia't! but is 'ā'ma' and so eatable as far as the elders of the tribe are concerned, although they could have eaten ɪcia't! even before the ceremony if they had so desired.

The E. and the S. bathed about four times during the night immediately after the ceremony.[5] The next day they refrained from food until about four o'clock in the afternoon, when they received a dinner of acorn soup which might be as watery as they chose, but they were not allowed to drink any clear, pure water. Up to this time they had had nothing to eat or drink since the night preceding the day of the ceremony, except that the S. had partaken of the fish. The wood carrier, A., prepared this meal for them and they were also allowed roots at this time, although the acorns were the principal article of diet. Ten days must elapse before the E. and the S. might taste the fresh salmon but the rest of the people might, according to No. 2, eat it any time after the ceremony. (Presumably she meant any time after the first five days had elapsed.) The two men and the woman remained in their sweat-houses for these ten days. But five days after the ceremony the woman boiled fresh salmon with hot rocks in a basket which was ordinarily used for boiling acorns. She cooked this salmon for anyone who came and asked for it. Anyone might catch the fish which she cooked. She had three stones, which she heated in the fire. She made the fire herself with wood which she gathered. The wood might be of any kind. The three stones had no special name or significance and were not kept from year to year. The woman shaped two sticks of green maple wood for pokers with which to manipulate the rocks, transferring them from the fire to the basket and back. They were called ṣap'·ɪk like any other fire poker.

On the tenth day when the A. was done with the ṣap'·ɪk and the rocks, before she left the sweat-house for her own home she took them to a big rock called Ṣap·ɪk'pɪcʊ'nᵘwā'ram about a mile up the hill above the sweat-

[5] Something like an Indian devil used to bother them when they went to bathe at night after the day of the ceremony: Every time they went they heard something, or a rock would be hurled at them, or they would hear crying without being able to locate it. It scared them. No. 2's son acted as E. one time and was similarly bothered when he went to bathe. So the next time he asked for the loan of a gun and said that he would shoot whoever it was. But the gun was not brought to him and he did not hear anything after that, so he and his family concluded that some of the people had been guilty, possibly some of the boys.

house and left them there. Then she was free to go home and at this time the E. and the S. also were done with the ceremony and might return to the general sweat-house and their ordinary occupations. When the E. left the sweat-house he had stayed in, no one might go near it until it was time to clean it and make it ready for the ceremony the next year. This refurbishing was done by the people who lived near the sweat-house and those who were specially interested in seeing the ceremony properly conducted. Even people as far away as Kat"emī'ʿn might come and take a hand in the work.

During the ten days after the ceremony the E. and the S. might sing two more songs. They might sing them together at any time they felt like it. No. 2 did not know them but said that another woman did but she could not be induced to give them. No one else except the two men was allowed to sing them.

The salmon ceremony was followed immediately by a series of dances in which the people made merry. They are a part of the salmon ceremony only in that they immediately follow it. They have nothing to do with the salmon, however. The E. did not dance, for he was afraid that he might "kick up" all sorts of disease, but the S. could and did dance.

YALE UNIVERSITY
NEW HAVEN, CONNECTICUT

SORCERY AT ONGTONG JAVA[1]

By H. IAN HOGBIN

IN A previous article in the AMERICAN ANTHROPOLOGIST I gave a rough general description of Ongtong Java, a coral atoll in the northeastern Solomon islands. It is made up of approximately a hundred small islands surrounding a large circular lagoon. These islands are inhabited by a Polynesian people somewhat similar to the Samoans. There are two tribes, each of which has a principal village. One of these villages is named Pelan, and the other Luangiua.[2] The tribes are made up of patrilineal joint families. The islands around the lagoon are owned by these joint families, but the property is vested in a headman, always the oldest man in the group. Each tribe has its king, and formerly it had also priests to officiate at ceremonies connected with the deities.

European influence began in 1870, but was not considerable until after 1900. The population was then estimated to be in excess of 5000. In 1928 the people had diminished to less than 700.[3]

Like most native communities, Ongtong Java had its sorcerers, though there were not many of them, and they never had the tremendous social importance that they have, say, in Africa. Today there is not one left, or at least no one has the reputation of being a sorcerer. Sorcery was never the topic of ordinary fireside conversation except in one instance of which I shall presently speak. My account is therefore not first hand, but is derived from what a few old men of the village told me.

The systems of black magic were the property of some of the joint families. The headman of the group was the sorcerer, and he taught the system to his relatives in order that his successors might have the same power as himself. The men of the joint family who stood closest to him in age knew as much about the subject as he did; they were able to use the spells if they wanted to, but generally it was only the headman who actually did this. The word for black magic is pa'ava, and that for sorcerer kama e loa pa'ava, literally, a man who knows black magic.

According to tradition all the systems were introduced from foreign

[1] Field research carried out under the supervision of the Australian National Research Council while the author held a Science Research Fellowship in the University of Sydney (1927–29).

[2] The ng to be pronounced as in "singer."

[3] H. Ian Hogbin, The Problem of Depopulation in Melanesia with special reference to Ongtong Java, Journ. Polynesia Soc., 1930.

places, either by visitors or by Ongtong Javanese natives who went abroad and learnt them. One system is said to have been brought by a man from the distant island of Maianga, who came to live at Ongtong Java, married and founded a joint family. The secrets of black magic he taught to his son, and they remained in the group until it died out some years ago. Another system was brought by a black (Melanesian?) woman who drifted to Ongtong Java in a canoe. She taught a local native some malignant spells which thus passed to his joint family. Two or three other systems were supposed to have been introduced from the Tokelau islands (Ongtong Java, Ko'olau). About 25 years ago, a man signed as a laborer to work at Roviana, New Georgia, Solomon islands. He learnt the black art from Melanesian natives there, and on returning used it against his countrymen. All the descendants of this man are now dead, so that it is impossible to say exactly what he did learn.

The belief that pa'ava came from foreign places might at first sight appear extraordinary, but when we examine other elements of Ongtong Javanese culture we find that pa'ava is not alone in this respect. The sorcerer was but one of the ritual specialists. Another was the man who had to carry out certain ceremonies over a log before it was fashioned into a canoe. This specialist was the headman of a joint family to which knowledge of the spells belonged, just as the sorcerer was also the headman of a joint family which had knowledge of spells of a different kind. Both of these systems of spells were believed to have come from foreign places in almost exactly the same way. So it was with the specialist who had to assist at the building of a new house, and so on.

When a sorcerer decided to kill a man, there were several ways in which it might be done. One was to get hold of something closely connected with him,—his hair, nail-parings, or saliva, the last being the favorite. The sorcerer watched where his victim spat, and subsequently took the wet earth and worked his spells over it. Very soon the man would sicken and, if not treated, would die. Another method was to make spells over some such object as a stone, a human bone, or a few grains of sand. During the night the sorcerer took this and either threw it into the house of the victim or buried it near the door. This was equally fatal. The third way was to make an effigy out of pandanus leaf and stick skewers through it. As each one was put in, the man is said to have felt a sharp stab of pain. Provisional black magic was also used. The sorcerer made spells over his property with the result that any one interfering with it became ill.

The spells, like all others at Ongtong Java, were direct appeals to the

spirits of the ancestors. The founder of each of the systems was, as I said, a foreigner, and his spirit was appealed to in the first case. Then came other appeals to the men who had practiced the magic, the forebears of the man using it at the moment. Since no one now practices pa'ava I recorded none of these spells, but over and over again I was assured of the truth of this statement. Since this is in harmony with what I know to be the case with other spells, I have no hesitation about accepting it.

A medium is always summoned when a man is taken ill. These mediums, who are usually women, allow the spirits of the sick man's ancestors to speak through them, thus revealing the cause of the illness. I have never been present at a séance when pa'ava was believed to be the cause, but I have frequently attended at other times. The medium or koulaiku (anchor of the spirits) first goes off into a sort of trance, and then the spirits speak through her mouth, using a voice quite unlike her natural one.[4] I was informed that if pa'ava had been employed against the man, the spirits would announce the fact.

Unless we accept some supernatural explanation, it is clear that the koulaiku must already have been in full possession of the facts. This is not corroborated by informants, who naturally believe that the spirits are really speaking and that the medium is only their vessel. In the case of pa'ava probably what really happened was as follows. When a man was taken ill his relatives considered his actions to see whether he could possibly have injured a sorcerer. If so, the sorcerer was immediately suspected of having used black magic against him. Now at Ongtong Java one has little private life, and what is known to one's relatives is as a rule known to other people, including the koulaiku. All that the medium did was to confirm the relatives' suspicions.

When it was known that pa'ava was at work, there were three possible ways of dealing with it. A more powerful sorcerer might be called in to work counter-spells; the one who had made them in the first place might be persuaded to undo his work; or he might be actually killed.

Fortunately I found a man who knew exactly what would happen if a more powerful sorcerer were called in. I have no idea how he happened to know this, but he made no secret of his knowledge. A number of white coconut leaflets were tied together and oiled. Two similar leaflets were then put around the sick man's neck, one being called after the sorcerer who had caused the illness, and one after the sorcerer who was making the cure. The

[4] H. Ian Hogbin, Spirits and the Healing of the Sick. Oceania, 1930.

latter took the bundle and waved it over the head of the man while he recited a spell. The particular one known to my informant ran as follows:

Angameilongu ke kama,
Meihala ke kama,
Kumangava ke kama,
Emangava ke kama,
moukala kea ngi halelo.
moukala kea ngi haku,
moukala kea ngi hiu,
moukala kea ngi loli,
moukala kea ngi 'aka,
moukala kea ngi hangipapa.
kou Meilongu, Meihala,
auaiho nga ngi hiu, nga ngi hali,
nga ngi lape, nga ngi haku, nga ngi loli,
kingo malili, kingo makala,
kingo e longo, he oka mangingi.

The four names are those of certain ancestors of the healing sorcerer, and it is they who are being appealed to. Kama is simply the word for man, the man Meihala, etc.; moukala[5] is to sprinkle ceremonially. Then sea slugs and other things regarded as unpleasant are mentioned, e.g., loli, bechede-mer; 'aka, snakes; and hiu, coral points. A translation of the second section runs, "I ceremonially sprinkle you to remove slugs," etc. The spirits are then mentioned again by name and asked to remove these things from the belly of the sick man and make him well again, restoring to him clean bowels. These evil things were thought to be placed inside the man by the sorcerer's ancestral spirits. To restore the patient to health it was merely necessary to remove them by similar supernatural means, and then purify him with a ceremonial sprinkling. If the man recovered splendid presents were always made to the sorcerer who had made the cure.

Should no sorcerer be available to carry out this ceremony, the next best thing was to persuade the one who had made the spells to remove them. This might be done with presents of coconuts, taro, or mats. The last resort, to kill him, was apt to be so dangerous to everyone that it was seldom attempted.

Now let us take a few actual cases.

During the memory of the oldest man living at Pelau, the smaller of the

[5] Cf. Maori word tala, to influence by charms.

two main villages at Ongtong Java, there had been eight sorcerers. One of the most famous was 'Ohou. One day a woman stole taro from the garden of 'Ohou's wife. Not knowing the actual thief, and being very angry, 'Ohou made spells against whoever it might be. Within two days a woman named Langiaka was taken ill and died. She confessed on her deathbed that she had stolen the taro.

All the coconut trees within the villages were owned by joint families. One day nuts were stolen from one of the trees belonging to Ke lopianga, the man I mentioned who had visited New Georgia. He suspected who the thief was and made spells against him. This man also died, confessing his guilt before he did so. On another occasion a man became seriously ill and sent his relatives with a present to Ke lopianga asking for his forgiveness because he had stolen taro from his wife's garden. The sorcerer accepted the present, and the sick man recovered. Ke lopianga naturally had protected all his property with provisional magic. It is nevertheless interesting to note that he was in no sense regarded as a social outcast, but took his place on all occasions on an equal footing with ordinary men.

Ke haki was the headman of a joint family which had knowledge of the black arts. It came to his ears that his wife was carrying on an affair with another man. He made spells against this man, who, sure enough, was taken ill. His relatives sent presents to Ke haki, but he refused to accept them. The sick man grew steadily worse and finally died.

There were several other well known cases of pa'ava being employed against men with whom the wives of sorcerers had been unfaithful, and also others of its use against men who had interfered with their daughters.

A comparison of these cases shows that in every one of them the sorcerer had good reason to be angry with the man against whom he made his spells. Any man, moreover, was likely to be angry on such provocation as loss of his property or interference with his women-folk. Though theft, adultery, and intrigue are regarded as more or less serious antisocial acts, there was no legal mechanism for the punishment of the offender. Generally it was left for the injured party to exact his own vengeance. For instance, the wronged husband might, and sometimes did, kill his wife's lover. A certain amount of risk attached to this because there was a likelihood of his relatives taking vengeance on the murderer. Whether they did so depended on the popularity of the two men, their social status, and the particular circumstances of the act. Sometimes adulterers went unpunished, sometimes they met a fate in which everyone acquiesced, and sometimes the instrument of that fate himself was made to suffer.

In the cases quoted, black magic was simply a means by which anti-social acts were punished. It was said that the sorcerer was in the right and the man against whom his spells were directed was in the wrong. So far then, pa'ava has appeared as a means of exacting punishment when certain rules were broken, that is to say, it provided a sanction for those rules and supplied a reason why people should obey them. Theft and the other acts mentioned were considered wrong by the community, and that was one of the reasons why they were not of too frequent occurrence. Black magic was still another of these reasons; men must have been prevented from breaking the law to some extent because they feared that sorcery might be employed against them if they did.

The best piece of specific evidence supporting these assumptions is the one case where pa'ava was suspected while I was living at Ongtong Java.

It was not until I had already been there a few months and had made some acquaintance with the language that I decided to visit Pelau village. Perhaps a week before I arrived there, Hangava, one of the leading men, had died. He was too old for active work and had remained at home to look after the children while the men had gone fishing and the women gardening. While they were away, one of the children had accidentally set fire to the house. Hangava escaped, but a few hours later he was taken ill and in two days he was dead, largely through shock. His relatives suspected sorcery because of the speed with which events had followed one another. The day after I arrived his son began to dig in front of where the house had stood. Sure enough, a human bone was found within a foot of the surface. The whole village was very much upset, and for a couple of days no one spoke about anything else. Everyone said that here was proof of pa'ava, and they began to ask, first, who could have done it, and second, who could have borne a grudge against Hangava. There was one family which had reasons for disliking him, but they were ruled out because they had never been in any way connected with sorcery.[6] In the end, the most balanced opinion regarded the presence of the bone as a mere accident, for, men said, there is only this one family who could possibly have had any reason for using pa'ava, and they certainly did not do so. The relatives, it is true, were unconvinced and were still looking for a possible culprit months afterwards.

So much then for the pa'ava working on the side of law and order. But there is yet another side to the matter.

[6] This bears out a statement I had recorded previously to the effect that sorcerers were never approached and asked to use their powers for the benefit of others.

The most sacred persons at Ongtong Java were the priests (maakua), but even they were not proof againt black magic. One of them became involved in a disturbance with a sorcerer. Their sons had fought one another over some toy canoes, and the fathers took sides. The disturbance grew more and more heated until finally the maakua took an axe and cut down a young coconut palm belonging to the sorcerer. It was taboo for this man to lay hands on his sacred person, so he determined to take vengeance in another way. He made a pandanus leaf model of a man and called it by the name of the maakua. During the night he took it and buried it in the cemetery. All the precautions of the relatives of the maakua could not save him, and he died some time later. Nothing at all happened to the sorcerer.

Even here pa'ava was scarcely employed for ends that were entirely antisocial. When I asked my informants whether they thought the sorcerer's actions justified, some of them said they did, while others held that men ought not to concern themselves with children's affairs.

There was one sorcerer, however, who did use his powers to vent his spite on all and sundry. I do not know if he was always successful, but certainly he was at times. As one might expect, the people punished him by avoiding him completely, and in this way he became a sort of pariah, everyone withdrawing as soon as he approached. This must have made his life extremely difficult, for much of the food can only be secured by communal effort. Another sorcerer, Ke ingoa, was responsible for killing a woman who had refused to marry him. The exile was not so complete in his case, and in the end he was gradually reaccepted, though with some hesitation. According to my informants, it was a long time before he was invited to join in a fishing expedition, and until his death no one would ever lend him his pipe to smoke.

In one case an unjustifiable use of sorcery led to even more serious consequences. The sorcerer had himself been guilty of theft. He had been caught red-handed by the headman whose property he was stealing and given a slight wound. In revenge he made spells against this man. At the first twinge of pain the latter sent his relatives to the sorcerer's home to seize him. They bound him hand and foot and threw him into the sea. It is unlikely that this would have happened had the headman not had a powerful joint family behind him. Another famous sorcerer, Ke pale-i'a, also met a similar fate; he was speared when he attempted to bewitch an enemy. In this case, too, the enemy happened to be an exceedingly important man in the tribe.

Black magic was, in the main, employed on the side of law and order.

It gave a sanction to moral rules and thereby helped to maintain social stability. At the same time, because it was a force which only some people had the power to use, occasionally they took advantage of it to work against the interests of society for their own private gain. There were still other sanctions which, though ill-defined, tended to prevent this. These sanctions provided the penalties of social disapproval, hostility, and even death. Only a few were prepared to run the risk of incurring such penalties. So it was that the private individuals who wielded the social force of black magic were regulated and controlled.

SCHOOL OF ECONOMICS
UNIVERSITY OF LONDON

A MAYA CALENDAR FROM THE ALTA VERA PAZ, GUATEMALA[1]

By J. ERIC THOMPSON

ANNUAL calendars, consisting of eighteen months of twenty days each and five odd days at the end of the year, have been reported from various Maya peoples. The most famous of these is that in use in Yucatan at the time of the Spanish conquest and used by present-day writers to designate the month signs found on the monuments of the Old Empire region. Actually, there is no evidence that these names obtained in the Old Empire. Indeed, one might state with some assurance, although positive evidence is lacking, that the Yucatecan names were not employed.

In addition to the Yucatecan annual calendar, the names of the months are also known for the Cakchiquel, Quiche, Pokomchi, and Chuj of Guatemala, and the Tzeltal and Tzotzil of Chiapas, Mexico. The calendars of these peoples are of the same pattern, but in most cases the actual names of the months differ.

Recently the writer came across a calendar of this same general pattern attributable to the Kekchi. The Kekchi are a virile and increasing people of Maya stock. During the past three centuries they have greatly extended their ethnic boundaries, absorbing linguistically scattered groups of Pokomchi, Chol, Lacondon, and Mopan Maya. At the present time they occupy a large part of Guatemala, including most of the Alta Vera Paz department, a part of the Baja Vera Paz department, and the southeast sector of the Peten department. In recent years they have overflowed into British Honduras, and now are in firm occupation of a belt across the south of the colony. They are believed to number somewhere in the neighborhood of 85,000, but it must be remembered that a large number of these Kekchi-speaking peoples are not racially Kekchi.

Some of these foreign groups absorbed by the Kekchi retain certain distinctive customs, beliefs, and peculiarities of pronunciation and grammar, but on the whole they form a homogeneous group.

In the catalogue of the Gates collection[1a] there is listed (item 1024) a

[1] It has just come to the writer's knowledge that Dr. William Gates, in his forthcoming work, A Dictionary of Maya Glyphs, treats of the same Kekchi calendar. The writer has no idea to what extent the two presentations duplicate each other, but he wishes to say that should such duplication exist, it is the result of conclusions reached independently by both Dr. Gates and the writer.—J.E.T.

[1a] The William Gates Collection. Manuscripts, Documents, Printed Literature relating to Mexico and Central America. . . . American Art Association, New York, 1924.

manuscript described as "Manuscript. Kekchi Native Calendar, of good and bad days, 4 to 16 pages. Photographic copy. A remnant of the native divinatory ritual." This photographic copy is now in the Department of Middle American Research, Tulane University.

An examination of a photostat copy showed an almanac of a Christian year with a number of feast days of the Catholic Church marked against the respective days on which they fall, a number of days marked good or bad, and other remarks in Kekchi which also appear to indicate native feasts and festivals. The calendar carries no recognizable date, and both the handwriting and spelling are poor.

The writer's eye was caught by a number of names scattered through the text, alongside of which in every case was placed a cross. It was soon apparent that the names represented a native calendar of typical Maya pattern. One month was missing, probably through an oversight, and two months were displaced one day. The calendar was arranged as follows.

Jan.	10	Yax	Jul.	28	. . . . .[4]
Jan.	30	Zac	Aug.	3	Icat
Feb.	18[2]	Chac	Aug.	23	Chacc[c]at
March	11	Chantemat	. . . . .		[5]
March	31	Uiniu[3]	Oct.	2	Cazeu
April	20	Muhan	Oct.	22	Chichin
May	10	Ahquicou	Nov.	11	Ianguca
May	30	Ccanazi	Dec.	1	Mol
June	19	Olh	Dec.	21	Zihora
July	9	MAHI			

Several of these month names are the same as those of the Yucatecan calendar, and retain the same order, but the five nameless days have been shifted forward one month. The month Mahi corresponds to Pop, and, indeed, in the text Mahi is written in capital letters, as though to call attention to the fact that it is the first month of the year.

There are also correspondences to the Pokomchi calendar of Narcisso.[6] This Pokomchi calendar is a twentieth century survival, and it is clear that

[2] This is a mistake for February 19.

[3] This text is not very clear at this point, and the name may be wrongly transcribed.

[4] The five nameless days. There is a cross, but no name is given. S[n] is written against July 29th, when the five nameless days should begin. This may be a contraction of santo "holy," or just possibly a contraction of sin nombre "nameless."

[5] The name for the month corresponding to September 12 has been omitted, presumably through carelessness.

[6] Franz Termer, Zur Ethnologie und Ethnographie des nördlichen Mittel-Amerika. Ibero-Amerikanisches Arch., 4: 394–395, Berlin, 1930.

at an earlier period the resemblance was closer. This is shown by the two Pokomchi months which Miss Breton[7] lists from the Pokomchi vocabulary attributed to Moran, and written about the end of the seventeenth century. According to this vocabulary the month Canazi ran from June 4 to June 23, and the month Petcat from August 3 to August 22. The displacement of the nameless days has thrown this out. If this is discounted, it is clear that the Pokomchi and Kechi Canazi months correspond to a day, and the Pokomchi Petcat corresponds to the Kekchi Icat, both beginning on August 3, and, as we shall see later, both incorporating the important root cat.

It would appear that this Kekchi calendar, as well as the Pokomchi calendar of Moran's vocabulary, were frozen into the Christian year, to use Dr. Spinden's expressive phrase, some time in the middle of the sixteenth century. If we shift the five nameless days from their present position to immediately after the month Olh, O Mahi falls on July 14, and assuming that O Mahi coincided with the Yucatecan O Pop, this would have occurred between the years 1552 and 1556, or the four preceding years, if the Yucatecan calendar began on 1 Pop.

The first attempt to conquer the Alta Vera Paz region was made in 1535, but it was not until 1549 that the native life was disastrously disturbed by the reductions. In this year the natives of a great part of Guatemala were removed from their old homes, and settled in mission towns under the direct care of the priests. Such a move might very well have proved fatal to the proper functioning of the calendar, and the fact that the date reached, by assuming that O Mahi and O Pop coincided, agrees within about three years, at the outside, with the great reductions is evidence that our assumption is probably correct. Below are given the three calendars, placed side by side. The Narcisso Pokomchi calendar is adjusted so that the months correspond according to the Moran vocabulary.

Yucatecan	*Kekchi*	*Pokomchi*	*Moran*	*Pokomchi*
Pop	Mahi	Kanjalam		
. . . .	Nameless	. . . . .		
Uo	Icat	Makux		Petcat
Zip	Chacc'at	Kaseu		
Zotz	. . . . .	Kanasi		
Tzec	Cazeu	Kanajal		
Xul	Chichin	Tzikin Kij		
Yaxkin	Ianguca	Mox-Kij		
Mol	Mol	Tij-txejk		

[7] Adela C. Breton, Pocomchi Notes, ICA 19: 545–548, 1915.

. . . . .	. . . . .	Nameless	
Chen	Zihora	Yax	
Yax	Yax	Sac	
Zac	Zac	Tsi	
Ceh	Chac	Txip	
Mac	Chantemat	Txantemac	
Kankin	Uiniu	Uniw	
Muan	Muhan	Muwan	
Pax	Ahquicou	Tam	
Kayab	Ccanazi	Sac-gojk	Canazi
Cumhu	Olh	Oj	
Nameless	. . . . .	. . . . .	. . . . .

The months Yax and Zac are common to all three calendars, as, too, is Muan in slightly different form. The equivalent of Mac in Pokomchi—Txantemac—has the same root, and the final t in the Kekchi equivalent month may be due to a slip of the pen. The new calendar, however, seems to stand about halfway between the Yucatecan and Pokomchi calendars. It shares in common with the former the month Mol, and with the latter the months Cazeu, Uiniu, Ccanazi, and Olj, allowing for slight differences in spelling and order.

Doubtless neither of these two calendars originated locally, for had such been the case, the month Yax would have been written Rax, to conform to Pokomchi and Kekchi spelling. It is clear that these calendars must have been borrowed from some nation, which did not use the letter r. Only one month has a letter r in it, and this, as we shall see, is capable of explanation.

It is interesting to note that the month Chac and the month Chacc'at both contain the syllable Chac, which is apparently a Maya root signifying red.[8]

Now the Maya hieroglyph for red is the same as the superfix for these two months, which in the Yucatecan calendar correspond to Zip and Ceh—words which in the Yucatecan language have no connection with this color. This identification is strengthened by the fact that the two months that precede Chac in both calendars mean green and white respectively in all Maya languages, and Chantemat may contain the archaic root for yellow.

If Chac represents the superfix of Chacc'at, one would expect the body of the glyph to mean c'at or cat (the scribe is rather vague as to the difference between c' and c). This is exactly what we find, for the main part of

[8] Karl Sapper in Das Nördliche Mittel-Amerika, 433, lists the following words for red used by the different Maya peoples: Tzakni, Chacni, Chak, Chakak, Chuk, Chöchčk, Chöch, tzaj, Tzoj, queak, Quiak, Caj, Cak, Quik, Quiek.

the following month is similar in form, both having identical cross bands, and its name is Icat (in Moran's Pokomchi Petcat). However, when we take it a step forward, and identify the superfix of Icat as i, we are met with an obstacle. The same superfix is found in the ninth month, corresponding to the Yucatecan Chen, but the Kekchi name is Zihora, and there is no apparent connection. However, it is probable that Zihora is a more modern substitution, for the word contains the letter r, which we have seen was not adopted in the case of the month Yax, which normally in Kekchi becomes Rax. Apparently the original calendar was used by a people who did not use the letter r, and only after it was taken over by the Kekchi was the month name Zihora, containing the letter r, brought into use.

We have seen that in some points this new calendar is probably nearer the archaic calendar of the Old Empire than that in use in Yucatan at the time of the conquest. In others, such as the common use of the names Mol, Muan, Yax, and Zac they are probably equally close to the original, while in one or two names, notably Yaxkin, the Yucatecan calendar is clearly closer to the original.

In all probability the archaic Maya calendar will only be reconstructed by a careful comparison of all the calendars that have survived. Unfortunately it is clear that in several of the calendars months have been displaced, and here we are at sea, for the Yucatecan names may also have been displaced in some cases for all we know to the contrary.

We have seen that, although this calendar was in use among the Kekchi, the fact that Rax has not been substituted for Yax shows that it was not of local origin. To whom can we attribute it?

The only neighbors of the Kekchi who do not employ the letter r are the Chol, who until the seventeenth century occupied a broad belt to the north of the Kekchi. It is possible, then, that this Kekchi calendar is of Chol origin, and support for this opinion can be found in the fact, well attested by history, that large communities of Chol were absorbed by the Kekchi in the past three and a half centuries. The fact that the present-day Chol names for white and red are suk and chuk is not an argument against this attribution, for the substitution of u for a is clearly a recent change, which is still incomplete.

Gates[9] has already suggested that the Chol may have been the Maya of the Old Empire, a view which the writer is inclined to accept, although definite proof is lacking. Be this as it may, it is an interesting point that the

[9] W. Gates, The Distribution of the Several Branches of the Mayance Linguistic Stock, *in* S. G. Morley, The Inscriptions at Copan, Appendix 12, Carnegie Institution, Washington, 1920.

calendars, which are closest phonetically to the hieroglyphs, are those which are found among the peoples living closest to the Old Empire region —the Yucatecans, the Tzeltal, and the calendar which we now provisionally assign to the Chol. Less closely related are the Pokomchi and Chuj calendars, which belong to people who live at a greater distance from the Old Empire region, and the calendars of the Quiche and Cakchiquel, who are the farthest removed from the Old Empire region, have very little phonetic relation to the hieroglyphs.

Probably all these peoples had their distinctive calendars, derived from a common archaic calendar, long before the break-up of the Old Empire. Indeed, the Old Empire may have been composed of a number of distinct linguistic stocks with separate names for the months, but using the same hieroglyphs. If such were the case the differences would have been much less then than they are today, for the divergences of the past thousand years would have to be discounted, and, undoubtedly, the severance of facile communication between groups after the disruption of the Old Empire, and, more so, after the Spanish conquest furthered disagreement.

It has already been pointed out that crosses are juxtaposed to the month names in this new calendar. In only one other place are crosses found. Opposite November 8 are two crosses, but no name. By analogy this day should have been of very great importance in the ancient calendar. The equivalent of November 8 in the native calendar is 17 Chichin, which in turn corresponds to 17 Xul in the Yucatecan calendar. Bishop Landa tells us that on the evening of 16 Xul began the great feast of Kukulcan, the Yucatecan Quetzalcoatl. This was probably the most important annual feast in Yucatan, and was associated with the great Mexican feast of Panquetzaliztli. It would appear that this was a feast of very great importance, common to all the Central American and Mexican peoples. In Yucatan the feast was known as Chickaban. It is just possible that there is some connection between this name and the month name Chichin.

A number of names, apparently associated with numerals, may mark days in the sacred 260 day calendar. Oxlahuchacchan, for instance, might correspond to 13 Chicchan of the Yucatecan calendar. Uuck Chab, also, might be a day sign, but so far the writer has not been able to convince himself that such is definitely the case.

FIELD MUSEUM
CHICAGO, ILLINOIS

THE PROBLEM OF THE CULTURE FROM THE ARVILLA GRAVEL PIT

By ALBERT ERNEST JENKS

AT THE Andover meetings of the American Anthropological Association, 1927–1928, Mr. Barnum Brown passed over to me a hope long dead. In 1909 and for a few succeeding years that hope had been to the American Museum of Natural History a fond one, but it had had no fulfillment. For me the case held additional allurements, namely, those of a well-known limited home area which, with scarcely distinguishable surface variations, spills its streams indifferently into Hudson bay, or the gulf of Mexico, or the Atlantic ocean by way of the Great lakes. Perennially I attacked the problem at close range—at first with little success. However, after three years and three months I arrived at the trail's end and recovered a considerable amount of dependable information which has created important scientific interest.

It is not the purpose here to present the entire history of the case. I do, however, greatly desire whatever suggestions others may be able and kind enough to contribute toward the elucidation of the facts here given. Toward this end, I endeavor to present the essential facts now in hand.

Mr. E. K. Kennedy in 1908 was Division Road Master of the Dakota Division of the Great Northern Railway. He had charge of getting gravel from the so-called Arvilla Gravel Pit in the Red River valley, in North Dakota. During the season's work, about one hundred graves were discovered in the gravel. Though it was the business of those at the pit "to dig gravel" rather than to do archaeological work, yet a number of the graves were carefully dug out by hand. Definite knowledge resulted, which I first obtained in March, 1931, from Mr. Kennedy, and which I have since confirmed by the written statements of two competent gentlemen now in larger administrative positions than they occupied twenty-three years ago —when their work took them frequently to the burial site. The facts presented below are, then, as reliable as needed for their acceptance by those interested. I consider them worthy the confidence of interested anthropologists.

Graves and Burials

The graves occurred in a meandering single row extending for some 1,500 feet along the top ridge of the gravel. The graves were not noted until the black prairie soil was stripped off for a depth of some twelve inches. The light gray gravel came at once to view, and in the gravel eight-foot circles of black earth were exposed at a distance of 15 to 20 feet from

the center of one to the center of its nearest neighbor. When dug out, the black circles proved to be graves. They were about eight feet deep and eight feet in diameter, with parallel, vertical walls. Each grave was completely filled with black earth and not at all with the light colored gravel.

Each grave dug by hand contained from four to eight human skeletons placed in flexed, upright, sitting position, all facing toward the center of the grave. It was the opinion of those at the gravel pit who saw the burials that all burials in each particular grave had been made at the same time. There was no evidence of intrusion.

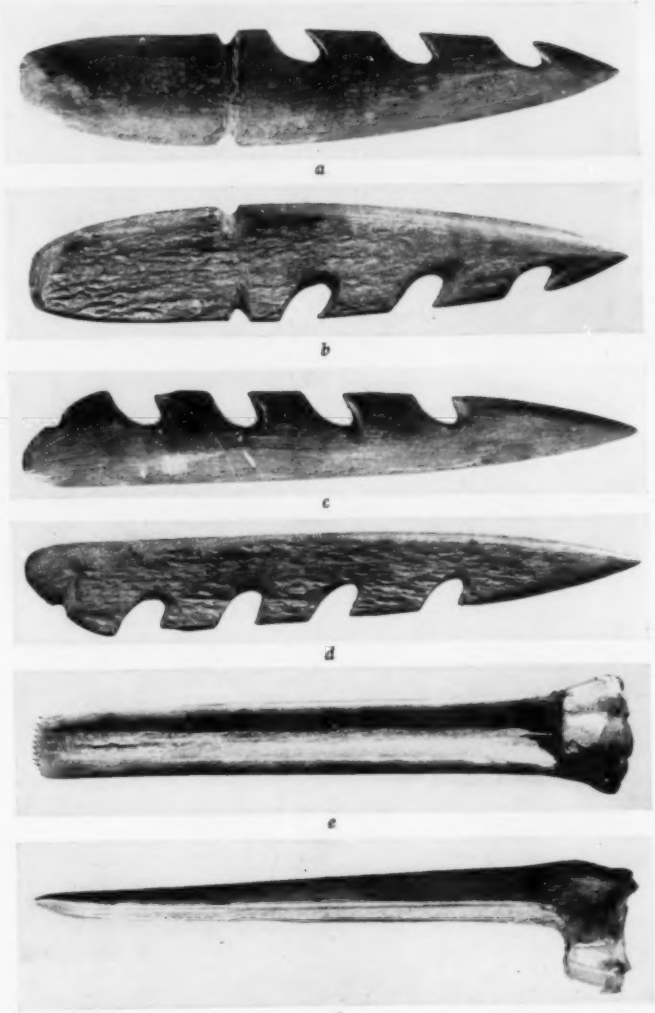
Artifacts

Very few artifacts were recovered. Apparently relatively few had originally been placed with the bodies. All artifacts reported as found are now in my possession, excepting two—a bone knife not fully described to me, and a ball of prepared red ocher. I have, however, only three beads from a necklace of fifty or sixty. The beads illustrated in this article are typical, excepting that one informant says some of the beads possessed surface designs of bird forms. The missing bone knife is also said to have had a design on one side, depicting the head of some large mammal, and, on the other side, of a flying bird. These pictures were drawn by incised lines. The ball of red ocher was seven or eight inches in diameter and appeared to have been prepared and mixed with grease. The artifacts which I have—two harpoons, a tooth-edged knife, a skin-dresser, three beads, and a sandstone "whetstone"—are illustrated and described in detail in the following pages.

Harpoons

The two harpoons (pl. 18*a–d*) are reported from the same grave. They have several characteristics in common. They are dark yellow in color, abundantly mottled with irregular darker, rusty blotches. Both are made of the same material. It is a hard compact bone which has not cracked or checked. It is so compact that many persons, including those who have known the pieces since their discovery in 1908, believed them to be of ivory. They are in appearance not unlike fossil walrus-tusk ivory, except that they are more mottled than the used pieces of this ivory with which I am familiar. However, the harpoons are not ivory. They are probably made from leg bones of a large mammal. They are heavy but, I believe, not mineralized, though they have the visible appearance of age and of slight mineralization.

In gross structure both are almost identical. They are convex on one



a

b

c

d

e

f

a, *b*, Harpoon A, face and back views, respectively. Ca. 2/3 natural size.
c, *d*, Harpoon B, face and back views, respectively. Ca. 2/3 natural size.
e, *f*, Skin-dresser, front and left side views, respectively. Ca. 2/5 natural size.

side for their entire length. We will call this convex side the face. It has the appearance of having been "whittled" with some kind of a knife. Knife marks are plainly visible parallel with the longer axis of the implement. The other side is also convex at the point and for about 25 to 35 mm. below the point. But thereafter it flattens, and still farther below, it becomes slightly concave. The concave area of the back is the interior surface of the shaft of the leg bone. It still shows a cellular bone structure—which has been dressed relatively smooth. The bones from which the harpoons were made were either too thin to allow the production of harpoons with both face and back convex, or else it was the deliberate intention of the maker to have the back concave to assist the flow of blood from a harpoon wound. As has been said, the entire convex face has been whittled—otherwise the harpoons would have been thicker. Probably the original bone was thick enough to allow the production of harpoons as thick as these are with both face and back convex, but the concave back was desired and retained—even being deliberately prepared by the maker of the harpoons.

Harpoon A has three barbs, and harpoon B has four. If there had been no barbs, each harpoon would have been bilaterally very symmetrical. The edges are almost parallel, except where they taper to the point for a distance of 25 to 35 mm. This means that the barbs do not project beyond the original edge of the weapon. Undoubtedly this type of harpoon—with non-projecting barbs—is a primitive type. So far as barbs are concerned, the harpoons are unilateral, with barbs along the left edge as one looks at the convex face of the weapon. Each barb was produced when the workman cut a U-shaped notch into the edge of the weapon, at an angle of about forty-five degrees. Both edges of the harpoons have been so thinned as to produce a good piercing point from the tip of the harpoon back as far as and to cover the first barb. Below the first barb the edges have not been thinned. Neither have the barbs been definitely pointed, though there is a tendency to undercutting of the barbs, especially on the back side of harpoon A (pl. 18*b*) and on the face side of harpoon B (pl. 18*c*). But this undercutting seems to have been intended more for a slight thinning of the weapon on face and back than for a thinning of the under edge of the barb. This technique would allow the barb to sink into the flesh of a speared victim if there was any "drag" on the implanted harpoon. The harpoon thus thinned on face and back would also hold in the flesh more securely than it would if the lower edge of the barb were thinned—because such a thinned barb would tend to cut its way out of the flesh in case of "drag." The notches which form the barbs do not extend halfway across the sides of the harpoon. In fact, they are not cut as far as the crest of the convex

face. It appears that they were thus consciously made, so as not to weaken the weapon more than necessary.

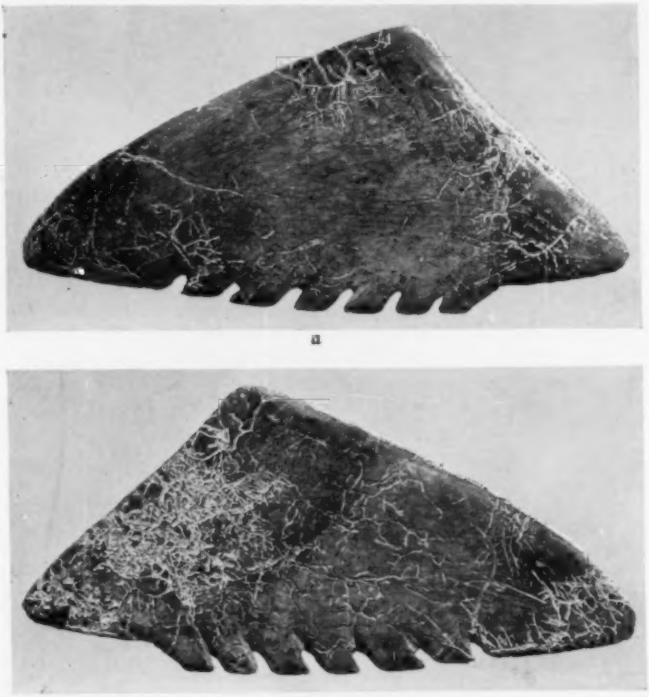
Another feature common to both harpoons is that they are stained dark gray and black over much of the surface near the base. This stain is probably due to blood which settled under leashing which attached the harpoon to a javelin or spear handle. In such a position blood would have remained in contact with the weapon much longer than it would on the exposed forepart of the blade—which is not so stained.

The bone of both harpoons is so compact that, when immersed in water for specific gravity determinations, no water was absorbed by harpoon B. Harpoon A produced only three very tiny bubbles. They arose at once on immersion and, I believe, came from air enmeshed with the thread by which this harpoon was suspended.

In the grave, both harpoons apparently were in contact with red ocher. The microscope reveals red ocher abundantly clinging to the weapons, and the open bone cells on the back of harpoon B are packed with so much ocher that it is very noticeable at a glance. The back of harpoon B is really red.

Clearly, harpoon A was hafted to a handle. A groove completely encircles the weapon 51 mm. from its base. It would enable secure leashing to a javelin handle.

Though harpoon B has four barbs, I am of the opinion that as the harpoon now is, and as it was last employed, the U-shaped notch under the fourth barb was employed in the process of leashing. This harpoon has no encircling groove, as has A. This harpoon had probably become broken and had then been reshaped as it exists today. Both the face and the back, from the fourth barb to the base, have many fine scratches—a technique of surface finishing found nowhere else on either harpoon. Those scratches (visible in the photographs) appear to have been produced in reshaping the implement near its base after it was broken. Again, there is a small semicircular notch in the left curved edge midway between the base of the harpoon and the U-shaped notch cut under the fourth barb. As that present semicircular notch originally was, it could have been either a fifth U-shaped notch forming a fifth barb, or perhaps it could have been a circular hole 3.5 mm. in diameter. In case it was a notch producing a barb, the harpoon was probably of the same type as harpoon A, excepting that B had at least five barbs. On the other hand, if there was originally a circular hole, then harpoon B had four barbs and was a retrieving weapon—such as the Eskimo use for sea mammals. Since the semi-circular notch is in the same longitudinal line as are the four U-shaped notches nearer the point of the



a

b

a, *b*, Tooth-edged knife, face and back views, respectively. Ca. 4/5 natural size.

a

b *c* *d*

e *f*

a, Tooth-edged knife, showing hand hold. Ca. 1/2 natural size.
b-d, Beads. Opposing surfaces shown in the two rows. Natural size.
e, f, "Whetstone," top and bottom views respectively. Ca. 1/2 natural size.

harpoon, and, also, since it is situated exactly the same distance from the fourth notch (24 mm.) as is the fourth from the third, and the third from the second, I believe it is the remains of a fifth barb-making notch.

No matter what the original type or form of harpoon B, the dark stain on the weapon below the present last barb makes one believe that the harpoon was used last as an effective three-barb weapon hafted to a javelin handle covering the base up to, and over, the fourth U-shaped notch. The face also is worn broadly concave opposite that notch—as if by the end of a handle leashed at that place.

MEASUREMENTS OF HARPOONS

A

Extreme length	144 mm.
Extreme breadth (across shoulder below third barb)	28 mm.
Extreme thickness (across shoulder below third barb)	11 mm.
Specific gravity	2.109

B

Extreme length	149 mm.
Extreme breadth (across fourth barb)	23 mm.
Extreme thickness (across fourth barb)	9 mm.
Specific gravity	2.047

TOOTH-EDGED KNIFE

The tooth-edged knife (pl. 19*a*, *b*) is unique so far as we know. No similar one is known to the following four important museums in America: American Museum of Natural History, New York City; Field Museum of Natural History, Chicago; Museum of Anthropology, University of California, Berkeley; National Museum of Canada, Ottawa. All of these museums possess very considerable collections of artifacts from areas from which one believes the culture of some of the Arvilla implements now in hand probably derived. No references to a similar type of knife have been found in publications at hand. We hope there are other knives of the same type, known to readers of the American Anthropologist, which may assist in identification.

Specific Gravity of the Tooth-Edged Knife and of Ivory

1. Tooth-edged knife, Arvilla gravel pit grave	1.94
2. Walrus tusk, Alaskan (worked fossil)	1.92
3. Walrus tusk, Alaskan (worked fossil)	1.94
4. Walrus tusk, Alaskan (worked fossil)	1.95
5. Mammoth tusk, Alaskan (fossil)	1.81

6. Elephant tusk, African ("living") 1.98
7. Whale tooth, Alaskan ("living") 1.98
8. Walrus tooth, Alaskan (worked fossil) 1.98
9. Walrus tooth, Alaskan (worked "living") 1.96
10. Walrus tooth, Alaskan (worked "living") 1.97

Specific gravity determination for the tooth-edged knife clearly classifies that artifact among ivories. The above table shows it is nearer the walrus tusk group of ivory than any other ivories we possessed for the determination.

I have a section of "living" Alaskan walrus tusk from a tusk large enough to allow the knife to have been made from one of its size, and also a completely mineralized Alaskan walrus-tusk ax which had been made from an equally large tusk. The tooth-edged knife is probably fossil ivory; it may be fossil walrus tusk ivory.

In color the implement is a dark, golden yellow, with a suggestion of tan. All three tips or points of the knife are stained, on both surfaces, a grayish color with a faint suggestion of green. Perhaps it is a blood stain.

The knife is slightly convex on its face—the side showing in the photograph of the knife held in the right hand. It is slightly convex on the back. All three edges are thin and will readily cut raw beef. When so employed, the knife must be drawn toward the user. If it is pushed, it clogs in the tissue. It cuts surprisingly well when drawn. Evidently it was made for a flesh-cutting knife.

The two plain edges are beveled for about 5 mm. on both surfaces. The extreme length of the knife is 121 mm. along its convex tooth-edge. The six teeth total 57 mm. of cutting edge. The longer plain cutting edge, which also is convex, is 90 mm. long. The shorter plain cutting edge, which is concave, is 63 mm. The extreme breadth of the knife is 53 mm. The knife is so thin that one would judge it must be fragile. One's first impression is of astonishment that it was found unbroken—even greater astonishment that it has not been broken in the twenty-three years since it was taken from the burial. But it is very strong in spite of its thinness. Head calipers opened the width of 2 mm. allow all six teeth to pass between them. Opened for a distance of 3 mm., the calipers allow the knife to pass between with absolutely no contact of its two surfaces anywhere. At 2.5 mm., however, the knife binds against the calipers in those areas within the grasp of thumb and forefinger (see pl. 20*a*). This means that the thickest, sturdiest part of the knife is the area of the user's hand-hold.

The knife was dressed, I believe, in the original process of making, by some implement which left twenty-five or thirty long scratches, like shal-

low incisions, on both surfaces. They are mostly parallel with the two longer edges of the knife, though they are rather well spread over face and back. They show very plainly in plate 19*a*. Both surfaces of the knife were later furrowed by growing plant roots or gnawing insects or worms. The many irregular furrows show white in the photographs. They are most abundant on the stained parts of the knife. Perhaps the food element of blood more or less soaked into the surfaces of the implement was sought. Both surfaces of the knife are polished to a shimmering luster—even over the scratches. But the luster is entirely obliterated wherever the furrows exist.

Particles of red ocher cling to the knife and are discovered rather abundantly by use of the binocular microscope. I did not see them with the unaided eye. Again one congratulates oneself on the unexpected and most rare conditions under which all the Arvilla artifacts have been kept by Mr. Kennedy. Ordinarily they would have been washed, scrubbed, scraped—even broken, just to see whether they would break. Instead, they have never even been washed.

Skin-Dresser

The skin-dresser (pl. 18*e*, *f*) is made from the right metatarsal bone of an elk. The metatarsal was not quite so large as the one from which it was identified in an articulated skeleton of a medium-sized bull elk. So our specimen probably is from a cow, since the bone is mature, as of an adult animal.

The tool was carefully and skilfully made. All edges of the blade have been rounded. Those edges which received the brunt of wear from the worker's grasping hand are smooth and shiny from greasy use. The bit, both front and back, is carefully shaped. One may say truthfully that the bit was made and maintained by a real craftsman.

MEASUREMENTS OF SKIN-DRESSER

Extreme length	236 mm.
Breadth of blade at beginning of shaft	36 mm.
Breadth of blade at middle of shaft	28.5 mm.
Breadth of blade at serrated bit	26 mm.
Breadth of articular head of metatarsal	45.5 mm.
Thickness (front to back) of articular head of metatarsal	45.5 mm.
Thickness (front to back) at point where the anterior surface of the shaft was cut away	21.5 mm.
leaving depth of shaft forming blade	21.5 mm.

Thickness of blade at middle of shaft[1] ..... 15 mm.
Thickness of blade at 27 mm. from bit ..... 9 mm.
Specific gravity 2.039

In distinguishing this particular skin-dresser, attention should be called to the fact that while the articulation of the metatarsal has been deliberately retained, no more of the tubular shaft has been retained than was necessary to maintain the articulation. We have both Siouan and Algonquin skin-dressers of elk, and also of moose, which have the articulation, but they all possess the tubular shaft, excepting where cut away a short distance for the bit. We also have from the Chipewayan similar halved shafts but without the articular end.

Specific gravity determination classifies the skin-dresser with the two bone harpoons—as would be expected. However, the bone of which the dresser is made is unlike the other two in its porosity. For more than one minute (or throughout the period of immersion in water) a fine spray of air bubbles arose from the full length of the shaft of this tool.

Red ocher also occurs on the surface of this artifact.

The blade is gradually thinned from its upper end (with a thickness of 21.5 mm.) through its middle (with a thickness of 15 mm.) to the beginning of its bit (with a thickness of 9 mm.). From that place, which is 27 mm. from its tip, the blade is thinned abruptly on its face (which is on the anterior surface of the shaft), until its serrated edge is thinner than 1 mm.

The serrated edge has twelve teeth—all very evenly cut and evenly spaced. Each tooth and each cut is a triangle just less than 2 mm. on each side. The serrated bit is not at a right angle to the sides of the blade. The bit is curved, with its central teeth projecting 6 mm. farther than its sides where the teeth begin.

I believe there was a leash, or hand-strap, extending from near the lower end of the dresser up over the wrist of the worker. There is a worn, uneven broad groove across the back of the blade about 50 mm. from the bit. I can understand it only when I visualize a looped leash playing and wearing there as its tension varied during the skin-dressing activity of the worker.

Studying this implement carefully in association with the two harpoons and the knife, one is convinced that all four belong to the same intimate culture. The technique of thinning all the artifacts on face and back, wherever teeth and barbs have been made, is uniform and of careful, de-

[1] This thickness would have been considerably greater had not the person who made the skin-dresser reduced the originally prominent outer border of the posterior surface of the shaft. This was done, probably, to afford a more satisfactory handhold when using the tool.

liberate workmanship. That thinning was a definite part of the production of such features of all those implements.

BEADS

There are three shell beads made, it is believed, from the univalve *Busycon perversus*. That shell is found along the coast of the gulf of Mexico and the Atlantic as far north as Maine, at least. It is not reported from the Pacific coast of America. It was extensively used by the Indians for making large shell beads—whose size was limited only by the length and thickness of the columella. Most of the large beads from the *Busycon perversus* were made up to the horizontal limit of the columella, so they are flattened, or oval, instead of cylindrical, in cross-section, in which case they frequently retain the marks of the spiral groove along the flattened side wall. Some specimens also show plainly, under the microscope, a feather-webbing type of foliation.

The three Arvilla beads are typical in that they are somewhat flattened, showing the spiral and also the typical foliation. In plate 20*b–d*, which shows the two opposing sides of all three beads, the view in the lower row illustrates, somewhat, the spirals and foliations.

The beads have been drilled from each end toward the middle, so the drilled hole is of the hour-glass form. It is about 3 mm. in diameter within the bead, but on beads *b* and *d* the hole is now worn to a diameter of 6 or 7 mm. at each end of the beads.

All beads are the color of pale yellow ivory. Plate 20*b*, shown with more detail in the lower row, is beautifully stained with golden tan.

Measurements of Beads

	b	*c*	*d*
Extreme length	22.5 mm.	31.5 mm.	21.0 mm.
Extreme breadth	17.0 mm.	16.0 mm.	10.0 mm.
Extreme thickness	6.5 mm.	8.5 mm.	8.5 mm.
Specific gravity	2.88	2.803	2.722

SANDSTONE "WHETSTONE"

This artifact (pl. 20*e*, *f*) of sandstone has the appearance of being an ordinary arrowshaft dresser. Its face is rather accurately bisected by the familiar longitudinal groove through which shafts were passed in the act of dressing. The groove is of the proper size for such use, being about 2 mm. deep and 7 to 8 mm. wide where its sloping edges merge into the face of the stone.

Mr. Kennedy, who recovered this artifact, called it a "whetstone." He

believed it was used to sharpen the tooth-edged knife, as the knife and this stone were recovered from the same grave. No other artifacts were recovered from that grave.

The knife has the long scratches on its two surfaces which could have been made with some such stone as this one, and it could readily be sharpened along either side of the groove. It is quite probable that this type of sandstone implement had been employed both to make and to sharpen the tooth-edged knife.

In this connection we must recall the scratches near the base of harpoon B which were probably made when the harpoon was finally reshaped—say, after having been broken. Those scratches could have been made by such a sandstone tool as this one.

The artifact is made of coarse arkose sandstone thoroughly cemented by abundant limonite. Practically each grain of quartz is coated with limonite except where it is now worn off. Though the structure is coarse, there is little if any friability, because of the thorough nature of the cementing process. The area showing white along the middle of the back is weathered feldspar. The implement could have been made from either Lakota or Dakota sandstone, both of which are so abundantly exposed in the Black Hills. That field is the nearest to the burial site of any such rock now known.

The measurements of the "whetstone" are as follows: It is 106 mm. long. It is 53 mm. broad across the middle from where it gradually tapers rather symmetrically along both edges to within 3 mm. of the ends—where it is 25 mm. broad. It is 27 mm. thick at the middle, from where it begins to get thinner toward the ends. This thinning is through curves to within 4 mm. from both ends where the stone is 14 mm. thick;—there the curves quickly become vertical ends of the artifact.

Final Word

We must recognize that the graves in the Arvilla gravel pit were dug out by men probably as poorly equipped as any men could have been for the task. Most graves were dug by Italian laborers—who did not possess even the urge of the "pot-hunter." They had no knowledge of what to look for, except as they had in mind types of objects already found. We must believe that they threw out, unseen, artifacts and materials which would have had archaeological value. But in spite of allowing for lost artifacts up to and well beyond the number covered by the law of averages, we must admit that the non-perishable artifacts placed in the graves, where from 400 to 800 human skeletons were reported to have been found, were most distinctly few.

No mention is made of the discovery of other bones in the graves—either those of dogs (as though buried), or of animal bones having had flesh for food. There is no mention of ash or charcoal, or of flint or (except for the "whetstone") of other stone implements. No lamps, no hammerstones, no macerators were recovered. We have no object of copper, nor were there bones with copper stain. There was no pottery. Of the few objects recovered from the graves we must also admit that some are extremely rare, and one is unique, so far as now known, within the great land areas of the Western hemisphere.

The facts now known present us a dual problem, namely: When and by whom was the culture of the Arvilla gravel pit produced? There are tentative conclusions which may be presented at this time.

The sandstone implement is perfectly at home where found, and is equally so farther west and northwest to British Columbia. The three beads shown might have come from any place in the United States and southern Canada; one should note that they are known along the Pacific coast, as well as in the areas nearer the waters from which it is believed the original shells came. The skin-dresser suggestively might be early Siouan or Algonquian. The harpoons seem to belong to the vast area north of the United States—even the Eskimo area; they are more reminiscent of British Columbia than of any other area so near the United States. If the lost beads and bone knife had animal designs by means of incised lines, they also would seem to belong farther north, as along the Pacific, than do the three beads and the skin-dresser which I have. Since the tooth-edged knife seems to be fossil ivory, one inquisitively turns to far north coastal areas for probable provenience.

The type of grave is not common. An acquaintance, Mr. R. J. Tibbetts, in southern Minnesota, informs me that he has excavated a few quite similar but somewhat smaller graves, in glacial gravel, which were filled with black earth. But they contained no artifacts in any way suggestive of those from Arvilla, and the burials were not multiple. We also find record of Ojibwa "deep graves," but no mention is made of any other feature of the distinctive types of Arvilla culture. The multiple burials could have been due to serious mass loss of human life from either war, epidemic, or the social custom of burying other members of the tribe in the chief's grave. My opinion is that the multiple burials in the Arvilla gravel in a single row of graves (nowhere double) were due to an epidemic, and that all burials were made by persons who knew the location of the graves previously dug.

All in all, one may conclude that the Arvilla Gravel Pit culture belonged to a migrating hunter tribe which in pre-Columbian time brought into the

area of the Red River of the North a culture some of whose characteristics (as preserved in non-perishable finds) were derived mainly from an area considerably farther north, and that said area was probably accessible to Eskimo cultural influence. If the hypothesis of a people migrating far from its ancient home holds, it is also possible that in a strange environment the tribe was wiped out, or its numbers so reduced by an epidemic, that the survivors did not noticeably influence the culture of any of the neighboring tribes—with which there may have been amalgamation. This dual hypothesis answers the natural query as to why so few specimens of a seemingly far-away culture-type are known in the center of the North American continent.[2]

UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MINNESOTA

---

[2] I am under obligation to the following faculty members of the Department of Geology, University of Minnesota, for certain scientific determinations: Drs. F. F. Grout and J. W. Gruner for specific gravities; and Drs. C. R. Stauffer and G. M. Schwartz for identification of the sandstone. All photographs are by Mr. V. P. Hollis of the Photographic Laboratory, University of Minnesota.

UNILATERAL ORGANIZATIONS IN MEXICO[1]

By RALPH L. BEALS

THE frequent discussions of Mexican social organization in the past have centered almost entirely about the nature of the calpolli system of the Aztecs. Occasional suggestions of unilaterally organized societies elsewhere have aroused relatively little interest despite the possible light they might shed on the Aztec situation or their perhaps even greater importance in suggesting the type of social organization of pre-Aztec Mexico. For this reason it is proposed to bring together the suggestive data found by the author in over three years of researches in early Spanish sources and in field work among the Mayo of western Mexico, deliberately ignoring, however, the Aztec situation. While perhaps no definitive conclusions are reached, the data may reinforce the conviction held by many that unilateral organizations lie in the background of Mexican culture history even though the proof of the Aztec case may be unsatisfactory.

The data collected deal largely with western and southern Mexico. In the main they are suggestive rather than conclusive. I will begin with Sonora and proceed southward in presenting them, ignoring for the present the Pima-Papago case.

Opata. Bandelier points out a division of pueblos among the Opata as follows:

> I also noticed or was led to notice, a division into original clusters, remnants of former tribal leagues, evidenced by associations of certain pueblos against others in the game of ball. Thus Banamiche and Sinoquipe play against Huepaca and Aconchi.[2]

While Bandelier believes this to be a survival of dialectic and regional differences, it is suggestive of the Southeastern division of towns.

Hernandez quotes Ramon Corral,[3] former governor of Sonora, as follows:

> On Sundays all the men are assembled to play the Guachicori (a stick race game)

[1] This paper was written while a Fellow in the Biological Sciences of the National Research Council.

[2] Adolph Bandelier, Final Report of Investigations Among the Indians of the Southwestern United States, Papers of the Archaeological Institute of America, Am. s. 3, vol. 1: 238–239, Cambridge, 1890.

[3] Corral's book, Las razas indigenes del estado de Sonora, was not available to me but I believe Hernandez has quoted from this work. He also quotes a surprisingly understanding biography of the great Yaqui chieftain, Cajeme.

or the Gomi: for the first the town is divided in wards (barrios) of upper and lower, which are the contestants and opponents.[4]

To my mind this is almost conclusive evidence of the former existence of moiety divisions.

Cahita. Information from the Cahita is based partly on field work. During the latter part of my stay among the Mayo in 1931 I secured the following information independently from two quite old men:

In the informants' youth the Mayo lived in rancherias. In each rancheria were to be found three different surnames. Sometimes there were four or two, but three was the regular number. All the residents of a rancheria were considered relatives and marriage was compulsorily exogamous. Marriage could be within the mother's rancheria but not with anyone of her family name. Marriage of first or second cousins on either side was forbidden. Descent and residence were paternal. Land was divided each year by the chief among the married men in accordance with the size of their families. This represents conditions after Christianization but before the break-up of the *ejidos* or village common lands under Diaz. How far it represents aboriginal conditions is uncertain, but what information of earlier conditions is available is entirely compatible with this mode of life. Time did not permit checking this information further or investigating the cognate Yaqui. It is hoped to do this soon.[5]

Evidently the Mayo were organized into localized patrilineal sibs or lineages. Further information on the nature of the surnames and whether they occurred in more than one village is desirable.

In the larger towns of the southern Cahita barrios occurred in which

> it sometimes happens that within a pueblo those (languages) of the barrios may be different,[6]

a situation which might arise by the agglomeration of smaller units. During councils, when a speaker finished, if he was considerably older than his hearers, they said: "You have spoken well, my grandfather." If he was about the same age, they said, "my older brother" or "my younger brother." The speaker concluded with an exhortation to large and small in the village, addressing them by

---

[4] Fortunato Hernandez, Las razas indigenes de Sonora y la guerra del Yaqui, xi. Mexico, 1902.

[5] Andres Perez de Ribas, Historia de los trivnphos de nvestra Santa Fee etc., 330. Madrid, 1645. A suggestion of the Yaqui house group is given by Perez de Ribas when he says a house was struck by lightning and a man's wife, daughter-in-law, and a grandson were killed.

[6] *Ibid.*, 21.

names of relationship, my grandfathers, my parents, my older brothers, my younger brothers, sons and daughters of my brothers.[7]

This is entirely compatible with the idea of localized kinship groups.

It should be briefly noted in passing that the Cahita formerly played a stick race game resembling closely the Southwestern type. What seems of significance is the statement that whole villages sometimes played against one another.[8] In view of Southwestern conditions, this may well argue a socio-ceremonial connection.

Acaxee. The Acaxee lived in rancherias "each with his sons, nephews, and kinsfolk" upon whom one relied for redress of injuries.[9] This would be comparable with the Cahita situation, apparently. The Humes, an Acaxee branch, had nine pueblos, each with four or five rancherias containing six or seven married neighbors (vecinos casados).[10]

The Acaxee played a ball game of the Mexican type (which was also played by the Cahita). The ball game had very important ceremonial associations and, except for practise games, one pueblo or rancheria played against the other, the circumstances being similar to those for the Cahita stick race game.[11]

West Central Mexico. In this region from Culiacan to Colima there is only information on barrios. The references to these I have assembled elsewhere. They occurred in at least part of the Cahita territory, province of Culiacan, Tepic, and generally in Jalisco. Eastward they occurred in Michoacan, Mexico, and vicinity, and in Huastec territory. At Cuiseo, Jalisco, one barrio was occupied by bilingual Nahuatl-Tarascan speaking people who did not flee the Guzman expedition, as did the inhabitants of the other barrios of the town.[12] At Cutzalan, Jalisco, each barrio had its own idol,[13] while at Ameca, Jalisco, separate heads existed for each barrio.[14]

Michoacan. The Tarascans of Michoacan seem to have had endogamous marriage within castes or even families, but it is not altogether clear that

[7] *Ibid.*, 18–19.

[8] *Ibid.*, 15.

[9] Javier Alegre Francisco, Historia de la Compania de Jesus en Nueva Espania, 1: 396. Mexico, 1841.

[10] Documentos para la historia de Mexico, ser. 4, vol. 3: 96. Mexico. 1853–7.

[11] For a description see Ralph L. Beals, The Acaxee of the Mexican Sierra, in press.

[12] Ralph L. Beals, The Comparative Ethnology of Northern Mexico before 1750, Ibero-Americana 2: 118–121, 1932.

[13] Fray Antonio Tello, Libro Segundo de la Cronica Miscelanea, en que se trata de la Conquista espiritual y temporal de la Santa Provincia de Xalisco en el Nuevo Reina de la Galicia y Nuevo Viscaya, 142. Guadalajara, 1896.

[14] Noticias varias de Nueva Galicia, 260. Guadalajara, 1878.

this was the case among the lower classes. There is a suggestion that the latter practised exogamous marriage within restricted barrios. Among the lower classes, in the case of those who had sex relations before marriage, the girl was taken to the man's house by her relatives and given to him with an explanation of the reasons, providing

he was of a barrio that gave husbands, otherwise they did not give her to him.[15]

This could indicate exogamy on a moiety or phratry system as well as endogamy, but it is very slender evidence which perhaps should be disregarded until further data are available. Joyce says marriage was endogamous in castes and barrios, but I do not know his sources.[16] It is strange that in an endogamous society, marriage of mother with son and uncle with niece should be permitted, and marriage of father with daughter and nephew with aunt should be forbidden.[17] While the exact meaning of these terms probably escaped the chronicler, by any reasonable interpretation of them they would be compatible with a paternal sib organization but never with a maternal organization.[18]

Colima. The situation is suggestive of localized, exogamous units. Descent is not given but is probably paternal.

They marry and divorce and repudiate upon their whim and call us, the Christians, papas, a reverential name among them and which in their tongue signifies father or person to whom they give and owe respect and obedience. Each one is a papa in his own affairs and dispensations. Without wishing other authority they take the wives and husbands they wish, marrying mothers and daughters together, brothers-in-law with sisters-in-law, two or three brothers or sisters together, and cousins, holding this manner of contracting their marriages as licit and without horror. They believe it to be an abominable fault without remission for a man or woman of one name to join in any way with a person of the same name and the man or woman who takes this bestial course is held as a common enemy and abhorred and persecuted by all. So greatly are they demented and deceived that they affirm that the names are the certain consanguinity and affinity and this they must observe and fear and not that which truly is.[19]

They dwell on the ridges and summits of hills, and on the sides of them, divided and distant one from another but where the place and their whims agree they form

[15] Relacion de los ceremonias, rictos, poblacion y gubernacion de los Indios de Mechoacan, hecha al Ill^mo^ Sr. D. Ant de Mendoza, 47–56. Ed. 2, Morelia, 1903.

[16] Thomas A. Joyce, Mexican Archeology, 163. New York, 1914.

[17] Relacion de . . . Mechoacan, 57.

[18] For a further discussion of this problem see Beals, Comparative Ethnology, *loc. cit.*

[19] Juan Surez de Cepeda, Relación de los indios Colimas de la Nueva granada, 1581. Anales, Museo Nacional de Arqueologia 4: 510–511. Mexico, 1912–13.

small barrios of six or seven neighbors in houses close together without observing order.[20]

They have wars among themselves, surname against surname in the form of bands.[21]

This again is highly suggestive of the localized patrilineal sib-groups found elsewhere.

Southeastern Mexico. The Zapotec, probably the Mixtec, and perhaps the Mixe and Zoe, had sib systems.[22] Dr. Radin informs me that the evidence for type of descent is tenuous, but that from the fact that the children of sisters could not marry he would conclude it was maternal.

Lacandone. Descent among the Lacandone is paternal. The principal inheritance is by the eldest son, and partly by the younger sons. If there are no sons, the brothers inherit, never the wife or daughters. Each family bears the name of some animal. Inasmuch as those bearing the same name usually live in the same neighborhood, there is a certain amount of localization. Marriages between individuals bearing the same name are infrequent. There are indications of a more complex organization of these sibs or lines of descent which has pretty well been obliterated.[23]

Maya. Landa says:

> They are careful to know the origin of their lineages, especially if they come from some house of Mayapan. The names of the fathers remain always with the sons and not with the daughters. They always call their sons and daughters by the name of the father and mother. In this way, the son of Chel and Chan is called Na-Chan-Chel, which is to say the son of such ones, and this is the cause that those of one name are said to be relatives and are treated as such and for this, when one arrives in some place where he is unknown and is in need, he immediately makes known his name and if there is any one of this name he is immediately received and treated with all kindness and thus no man or woman marries with one of the same name because it is for them a great disgrace. The Indians do not permit the daughter to inherit with the sons except by charity . . . . the sons divide equally, except to him who most notably has helped gather the estate is given an equivalent return, and if all are daughters, the brothers inherit[24] . . . . If one married one's brother's wives, it was considered bad. They do not marry with step-mothers, nor their wives' sisters, nor their mothers' sisters, and if someone did so it was considered bad; with

[20] *Ibid.*, 511.

[21] *Ibid.*, 519.

[22] Paul Radin, Mexican Kinship Systems, UC-PAAE 31: 2.

[23] Alfred M. Tozzer, A Comparative Study of the Mayas and Lacandones, Archaeological Institute of America, Report, 40–41. New York, 1907.

[24] Diego de Landa, Relacion de las cosas de Yucatan, Brasseur de Bourbourg edition, Spanish text, 134 et seq. Paris, 1864.

all the other relatives on the mother's side they could marry, even though they were first cousins.[25]

This again only makes sense if we assume a sib system.

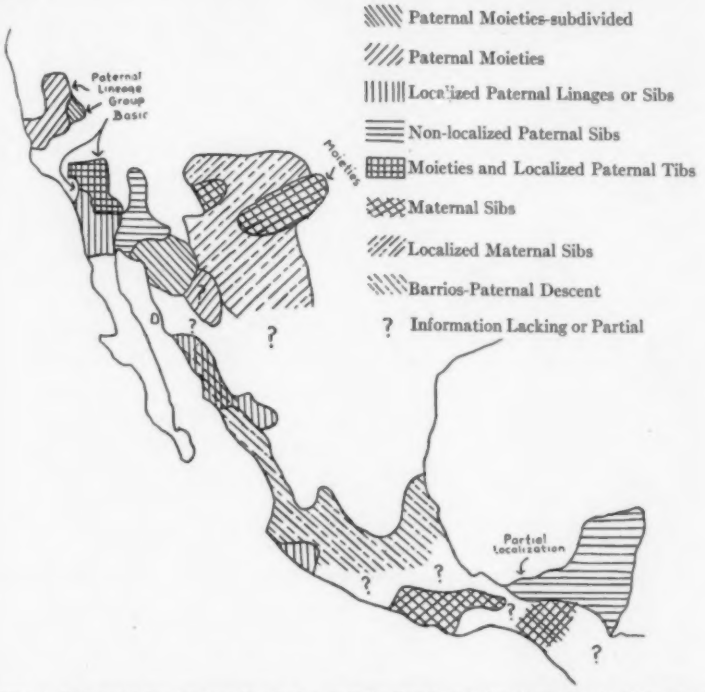
Kakchiquel. According to Joyce the Kakchiquel have a sib system similar to the Mexican calpolli but based on relationship rather than locality.[26] The sororate and levirate were not permitted nor marriage with the maternal aunt. Residence was matrilocal for five or six years, this being connected with bride service.[27] A man became a relative of his wife's clan, but never she of her husband's clan.[28] This suggests a maternal system very strongly, but the remainder of the points are so strongly similar to the Yucatan Maya that one is tempted to believe there is an error in the emphasis placed on maternal descent. The kingship among the Kakchiquel descended in the male line.[29]

Adjoining Areas. In the region north of Mexico, the Pima and Papago had paternal sibs which did not affect marriage. These were divided into two groups, the Vulture or Red People, and the Coyote or White People.[30] This color division also existed among moieties in the Southeast.[31] The association of one moiety with coyote is general in Southern California; the association of the two moieties with up and down as among the Opata occurs among the Yokuts, Western Mono, and Luiseño.[32] Localized male lineages are found generally in southern California except for the Colorado River Yumans and as far north as the Miwok. The Colorado River Yumans have patrilineal clans, and in California the importance of the localized patrilineal lineage is often submerged in the clan and moiety organization.[33] However, Strong points out that the lineage differs from what he calls clans only in the increment of socio-ceremonial functions, there being no real difference in kind involved.[34] The Opata division of upper and lower barrios for playing a ball game assumes particular interest in view of the widespread occurrence of this practise in the eastern United States and the Cahita and Acaxee data cited.

To the south. It is beyond the scope of this paper to attempt to go into

[25] *Ibid.*, 40.
[26] Joyce, 282.
[27] *Ibid.*, 285.
[28] *Ibid.*, 286.
[29] *Ibid.*, 278.
[30] Frank Russell, The Pima, BAE-R 26: 197, 1904–5.
[31] John R. Swanton, Creek Social Organization, BAE-R 42: 157, 1928.
[32] William Duncan Strong, Aboriginal Society in Southern California, UC-PAAE 26: 341.
[33] *Ibid.*, 342.
[34] *Ibid.*, 344.

the Central and South American data. Dr. Ronald L. Olson has pointed out, however, a few interesting facts in Peru, particularly the old division into two or four, common to much of the Inca Empire, and particularly the division of the main portion of the capital of Cuzco into two barrios called upper and lower, or right-left, elder-younger, male-female, and which were perhaps exogamous.[35] Dr. Olson in 1930 observed modern villages in highland Peru which had moiety organizations with significant reciprocal functions.



Map 1. Unilateral Institutions in Mexico and the Southwest, based on data in this paper; on Eward W. Gifford, Clans and Moieties in Southern California, UC-PAAE 14, map facing p. 215; and on William Duncan Strong, An Analysis of Southwestern Society, AA 29:17.

[35] Most of the data may be found in Phillip Means, Ancient Civilizations of the Andes, 207, 208, 219, 306–7, New York, 1931, and Garcilaso de la Vega 1: 67 and 307, Hakluyt edition of 1869.

Conclusions

The data outlined, despite their meagerness, seem to offer material for the formulation of a working hypothesis. The half-statements of the majority of the Spanish sources perhaps do not give convincing proof of the existence of clans or sibs in Strong's sense of the term, that is, a unilateral organization with socio-ceremonial implications and functions. But they point to the probability of such organizations by the most conservative interpretation, and rather definitely show the existence of patrilineal exogamous lineage groups for much of the west coast of Mexico. These groups, frequently localized, are found from near the United States border to close to the Zapotec-Mixtec area where they come in contact with sib systems of both maternal and paternal type (assuming the unknown Guerrero region to resemble either the Colimans or the Mixtecs). The latter seems to be part of an area of unilateral organization extending as far south as the Kakchiquel. On central America proper we have as yet no data but the South American material is highly suggestive.

The fact that the barrio is found in and close to an area of localized patrilineal groups is of some significance. Just what the barrio meant to the Spanish in this region it is hard to tell, but as I have pointed out elsewhere, it was obviously a recognizable geographical unit of the pueblo, and in the region of larger towns from Jalisco to Culiacan it most probably was simply the tangible expression of the formation of the towns from the joining of localized kin groups which lived formerly in separate villages.[36] The barrios on the west coast must have had some functional values and, as we have seen in the case cited of Cuiseo, Jalisco, not only did they represent a visually discernible division of the town, but they actually represented a difference of peoples of some sort. Consequently it seems highly probable that they demonstrate what would have occurred had circumstances forced the amalgamation of the exogamous patrilineal lineages of, say, the Mayo into towns, preserving the localization of these units. From its distribution in areas of large towns, it is evident that it was in some way correlated with the agglomeration of peoples into large communities, and that it was also in an area at least in contact with unilaterally organized peoples.

This situation makes the presence of a sib organization among the Aztecs at least more probable, although it naturally does not prove anything. An exhaustive re-analysis of Aztec social organization might, however, reveal features comparable to the data presented in this paper. Or it may be found that the features of Aztec social organization which suggest a sib

[36] Beals, Comparative Ethnology, *loc. cit.*

system are aberrant elements of no real functional value taken over from an earlier sib-using culture, or which had crept in from the neighboring sib-using peoples.

With respect to the general North American situation, the data suggest that the paternal localized lineage groups of California represent an extension of an area which reaches from near southern Mexico along the coast to the Miwok in central California. It sheds no light on whether the moiety traveled along with the basic patrilineal lineage group, although the suggested moieties of the Opata in particular point to southward connections for the moiety as well. It also somewhat reverses the Southwestern situation and suggests that we must view the matrilineal sib organization there as marginal to a patrilineal area. The data, if accepted, will perhaps also give some additional support to the theory of a single source for North American sib systems as advanced by Dr. Ronald L. Olson.[37]

The accurate evaluation of the data here presented must be left to those more competent than myself. Nevertheless, I feel that the strong suggestion of linkage with the cultures of southern Mexico is of considerable significance. I have in hand data, which I hope to publish before long, which suggest that influences from the southern part of Mexico have at one time been important on the west coast of Mexico and have probably exerted some influence in parts of the Southwest. These data should strongly reinforce the evidence of the spread of patrilineal institutions along the same route.

UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

[37] Ronald L. Olson, Unilateral Institutions in North America, unpublished manuscript.

REPORTS

ARCHAEOLOGICAL FIELD WORK IN NORTH AMERICA DURING 1931

This is the tenth of a series of annual statements covering field activities in North American archaeology assembled by the Committee on State Archaeological Surveys of the Division of Anthropology and Psychology of the National Research Council. It is a compilation of brief reports sent to the Committee for this specific use by the representatives of most of the institutions and organizations supporting such field work on this continent. Its purpose is to record briefly the work done and the results obtained during the past field season. The more complete, technical reports of these activities will be found in the several publication media used by the organizations concerned.

The Committee wishes to record its appreciation of the cooperation which has made this review possible, and requests that any suggestions concerning ways and means of increasing its usefulness be sent to the Chairman.

Alabama. In January, Mr. M. W. Stirling, Chief of the Bureau of American Ethnology, conducted an archaeological reconnaissance in the vicinity of High Point, North Carolina, visited two sites on Pine Island in the Tennessee River in northern Alabama, examined the early historic sites being investigated by the Alabama Anthropological Society near Montgomery, and visited a large mound at Flomaton, Alabama.

H. W. Dorsey,
Chief Clerk, Smithsonian Institution

In January, 1931, the Alabama Museum of Natural History resumed, for about two weeks, its excavations at Moundville. Five areas in the vicinity of Mounds "R" and "M" were examined. One hundred and five burials were encountered, yielding 289 artifacts, including 72 earthenware vessels, one unusual fish-hook made of copper, and several fine pendants and stone tools. An exceptionally large ratio of animal effigies was recovered.

In August, an expedition of five members of the Museum staff with ten diggers worked in two sites. In a cave on Little Bear Creek, Colbert county, some 20 badly disturbed skeletons were encountered. Although no artifacts were found with the burials, several objects, including a bone fish-hook, a clay pipe, a bowl decorated with elementary handles and notched lip, and tools of stone and flint were removed from the deposits. This cave gives promise of interesting future finds if permission can be secured to continue the examination. Excavations in the Reeder mound at the mouth of Mulberry creek on the Tennessee river in Colbert county yielded 13 skeletons, mostly infants. There appeared to be evidence of aboriginal disturbance. No artifacts were found in association with the burials, with the exception of 11 finely polished, perforated bear canines found at the chest of an infant. One stone axe was recovered. The soil in the mound was generously interspersed with mussel

shells from the surface to a depth of four feet, and large quantities of kitchen-midden material were found in and around the mound.

On July 1, 1931, a systematic archaeological survey of the state was begun by the Museum staff. No site is listed until actually located and inspected by the Museum party, which tends to eliminate errors in duplication, and to prevent a site from being improperly classified, as the result of recording rumors only. The survey is only partially completed, 30 of the 67 counties having been visited. The resulting information will enable the Museum to show, on a 1/500,000 scale map, all the sites within the state, and to card-index the information, making it readily accessible to interested parties.

W. B. Jones,
Alabama Museum of Natural History

The work of the Alabama Anthropological Society was confined, in 1931, to the valleys of the Coosa, the Tallapoosa and the upper Alabama rivers. Nearly 100 burials were found at a site which has a known history from September 1540, the date of DeSoto's visit, to 1814, when a town of 200 houses was burned by General John Coffee, of Andrew Jackson's army. These burials were under the house-sites, opposite the fire hearth, and are in groups 20 long paces apart. In the majority of cases, shell, earthenware, and stone objects are associated with European trade material. A number of very fine clay pipes, showing no European influence, have been taken out. The burials are nearly always in groups of threes and fives, suggesting a family. A number of burials are of children. At Huith-le-walli (sometimes Ullibahali) of the Spanish narratives, the houses were 19 paces apart, and at a nearby site 27 paces apart. At the latter site, James White, Jr. recently took from under a hearth an earthenware tray of superior grade filled with fully three pecks of charred food, consisting of corn on the cob, loose grains of corn, acorns, beans, and what resembles peanuts. At the mouth of the Coosa, a new section of the cemetery disclosed some fine specimens of urn-burials. Except in rare cases, no artifacts were in the urns, but frequently shell and stone implements were placed at their sides. Near the periphery of the cemetery, a 12 inch vessel was found containing the remains of a child and a short string of glass beads. Except for a silver piece found on a previous occasion, this is the first occurrence in our records of trade objects associated with urn burials. This site is adjacent to the old French post established in 1714, and these trade materials may indicate a later intrusive deposit. As before, no stratified deposits were found. In Alabama, the habitation and burial sites are adjacent, rather than superimposed. Evidences of as many as three periods of occupation may frequently occur in burials within a relatively small area.

Peter A. Brannon,
Alabama Anthropological Society

Alaska. Dr. Hrdlicka continued, under the auspices of the Smithsonian Institution and the National Museum, his anthropological researches in Alaska. The explorations of 1931 were devoted to Nushagak, Molchatna and Woods rivers, the

proximal parts of the Alaskan peninsula, Iliamna lake, and Kodiak island. They resulted in anthropometric data on the surviving full-bloods of those regions, location of many old sites with excavations in the most important, and the gathering of over 100 boxes of important anthropological and archaeological materials. The work, while very difficult owing to frozen ground, inclement weather, and dearth of help and transportation, proved exceptionally remunerative, and revealed, on Kodiak island, a wholly new and highly promising field for American archaeology.

Messrs. James A. Ford and Moreau B. Chambers were detailed by the Smithsonian Institution to carry on archaeological investigations in Alaska during the past summer. Mr. Chambers excavated for three months at Gambell, St. Lawrence island, where during the summer of 1930, Mr. Henry B. Collins, Jr. had found an unbroken sequence of Eskimo culture extending from an early phase of the Old Bering Sea culture to the present time. Mr. Chambers' work added to the completeness of this chronological record, especially in bringing further evidence of the transitional phase between the Old Bering Sea and the Punuk periods.

Mr. Ford proceeded to Point Barrow, but as the result of the worst ice conditions in the Arctic for many years, he did not arrive until late August when the ground was beginning to freeze. Consequently he wired for and received permission to stay at Barrow over the winter, so as to get in a full season of excavation in 1932. Barrow seems the most promising locality at which to find dependable evidence of the relationship between the Old Bering Sea culture and the Thule, the dominant prehistoric Eskimo culture of the eastern regions.

Walter Hough,
U. S. National Museum

The researches under the auspices of the Museum of the University of Pennsylvania by Miss Frederica de Laguna, assisted by Mr. Wallace de Laguna and Mr. Edwin B. Newman, centered in Kachemak Bay, on the southern coast of Cook inlet, where several shell-heaps and village sites were excavated. Some of these appear to be of considerable age, since deposits were found to a maximum depth of 14 feet, and the oldest site investigated is now entirely below the level of high tide. These excavations indicated that the culture of the ancient population was Eskimo, although the region is now inhabited by the Kenai Indians, an Athabaskan group which has pushed down to the coast from the interior in relatively recent years. Stratigraphical results indicate that four stages of this Eskimo culture may be distinguished. It was apparently most similar to the cultures of the present Eskimo of Kodiak island, Prince William sound and the southern coast of Kenai peninsula. Probably the most interesting object found was a well-shaped stone lamp with V-shaped grooves on the bottom, apparently belonging to the culture which produced the remarkable stone lamps with figures in the bowl, the origin of which has been in dispute. Many specimens of ancient Eskimo types were recovered, including harpoon heads of obsolete types, including the so-called Thule and Birnirk, but probably the most characteristic and numerous objects were grooved or notched stones presumably used as bolas. Several burials were found, the remains of which have not

yet been studied. A few were buried in flexed position, but most of the interments were secondary burials, the bones having been buried in holes after the flesh had been allowed to decay by exposure.

J. Alden Mason,
Museum of the University of Pennsylvania

Arizona. Dr. Frank H. H. Roberts, Jr. spent the field season from May to September conducting a series of excavations at an archaeological site three and a half miles south of Allantown, in eastern Arizona, under the auspices of the Bureau of American Ethnology. The site is one which will prove of considerable importance in the study of Southwestern archaeology, because four distinct horizons are represented. The earliest remains are those belonging to Basket Maker III. Subsequent horizons are Pueblo I, II, and III. Valuable information on the sequence of pottery types was obtained through stratigraphic studies made in refuse mounds. Fourteen pit houses belonging to Basket Maker III and Pueblo I were excavated. In addition to information concerning the type of house and the sequence of pottery types, as well as data concerning the method of disposing of the dead, valuable specimens were recovered. One of the pit houses was restored, in order that visitors to the site may observe domiciles of this variety. Shed roofs were erected over the remaining pits of two other structures, so that they will be preserved for students and other interested parties. During nine weeks in July and August, the Bureau expedition was augmented by four graduate students holding scholarships in archaeological field method from the Laboratory of Anthropology at Santa Fe, New Mexico. The Laboratory cooperated with the Bureau in the investigations made during that period. Further work will be done at this site during the next field season.

Mr. Neil M. Judd, Curator of the Division of Archaeology, U. S. National Museum, was detailed to the Bureau for the purpose of conducting an archaeological reconnaissance in the Apache country of southeastern Arizona. Mr. Judd devoted most of his limited time to a superficial examination of caves containing small rude dwellings, situated along the western base of the Natanes (Nantac) plateau. Potsherds associated with these dwellings correspond to those from ruins in the Showlow-Pinedale district—ruins recently dated by the Douglass tree-ring method, as of the late 13th century. The same caves had served as shelters for Apache Indians, probably during the troublesome period of 1871–1886, since a number of old Apache baskets and other objects were cached in them.

H. W. Dorsey,
Chief Clerk, Smithsonian Institution

From February to June, the Arizona State Museum continued the excavations at the Martinez hill ruin, a short distance from the old San Xavier Mission. This prehistoric site belongs to the Late Pueblo period and presents excellent types of red-on-buff pottery. The walls are extensive and massive, corresponding to the Casa Grande type. We have not yet determined whether or not the village was made up of a series of compounds, but it seems very likely.

From July 20th to September 1st, a Museum expedition began the excavation of a large pueblo on the Fort Apache Reservation known to the Indians as Kinsleba or "Brown House." It will require two or three seasons to study thoroughly this extensive ruin, which should reveal data regarding the life of the people of the Upper Salt River region. The Museum, during the year, has received a small collection of pottery and stone implements of the Elden Pueblo from the U. S. National Museum, and some excellent potsherds from eastern Arizona from the Gila Pueblo in Globe. The Los Angeles Museum has presented a model of the ancient pueblo uncovered by the Van Bergen Expedition near Casa Grande, and a representative collection of early red-on-buff pottery from the same locality.

Byron Cummings,
Arizona State Museum

Owing to climatic conditions which allow excavation throughout the year, the Department of Archaeology of the University of Arizona permits advanced students to do field laboratory work in nearby sites in cooperation with the expeditions of the Arizona State Museum. In the spring such laboratory work was done at the Martinez hill ruin south of Tucson. Since the opening of the University in September, the Department has cooperated with the Museum in excavating at the University ruin about eight miles northeast of Tucson. This is a large pueblo ruin of a type similar to that of the Martinez hill ruin. During the holiday seasons, the students have done reconnaissance work in the Chiriqua and the Sierra Ancha mountains, thereby gaining a wider acquaintance with the different types of ruins found in our Southwestern field.

Byron Cummings,
University of Arizona

Excavations of Pueblo Grande ruins by the Phoenix Archaeological Commission continued from January to June. Though comparatively little work has been done on the mound so far, evidence obtained from the excavated portion points definitely to a complete evacuation of the lower levels with a subsequent re-occupation of a higher level on top of fill ten feet deep in some places. No furniture has been found below the new top level and the fill, often brought from trash mounds, contains sherds of identical types from bottom to top. Test holes below the bottom level show another level of occupation another ten feet down, but so far no difference in types of artifacts from those above. The theory that waterlogging of the surrounding land caused the lower level to become unfit for any use for which the building was intended has received support through a study of the prehistoric irrigation in this valley.

The balance of the year was devoted to the study of the local culture material, with occasional field trips in the local region. In August, a trip was made to the Prescott region where the local pottery meets that of the mountains of the Bill Williams country, and in December a brief survey was made of some ruins in the Superstition mountains. The Prescott region shows a culture which is more unlike

than similar to the local irrigation culture, but the Superstition mountains survey produced evidence of check dams for water preservation and examples of all the minor antiquities found in the valleys of the Salt and Gila rivers.

Odd S. Halseth,
Phoenix Archaeological Commission

The first four months of 1931 were devoted by the field staff of Gila Pueblo to the excavation of a Hohokam village of the Colonial period in Roosevelt lake. Complete data showing the construction of Hohokam pit houses was obtained and a definite chronological position defined through cross-dating with northern sherds. A report on this operation has been distributed.

During May we carried our ceramic survey to the southeast and covered the general area between Safford and the Chiricahuas, running into a complex of red-on-buff wares which has added breadth and depth to the existing problem. In June a base camp was established at White river, Arizona, which yielded us 100 sites. July was spent around Showlow, where another 100 sites were brought in. The survey was then continued in New Mexico and Texas. The season's work to date has resulted in our adding nearly 800 sites to our sherd collections. The sherds have been washed and mounted as described in "The Use of Potsherds in an Archaeological Survey," The Medallion, 1928, and the boards are now being studied.

During the year we have received important additions to the pottery collections: from the Los Angeles Museum, a representative collection of red-on-buff pottery from the Grewe site near Casa Grande, excavated by the Van Bergen-Los Angeles Museum Expedition, 1929; from Carnegie Institution, a collection of Classic Mesa Verde pottery excavated by Earl Morris in the La Plata drainage. We have also effected an exchange of material with the University of Utah by which we have acquired a representative series of Mesa Verde pottery from the vicinity of Blanding, Utah.

Excavation at Gila Pueblo has progressed slowly. Two cemeteries have been discovered, one to the east and one to the west of the Pueblo, yielding the best examples of Gila polychrome ware that we have seen. Five additional rooms have been uncovered, the walls sheathed with a film of cement and a waterproof roof erected to preserve them. Pottery, stone work, and burials have been cleaned, mended, and replaced *in situ*.

Harold S. Gladwin,
Gila Pueblo, Globe, Arizona

The Museum of Northern Arizona continued the projects begun several years ago: (1) to extend the Archaeological Survey in every direction from Flagstaff as a center; (2) to secure datable beam material from ruins covered by volcanic ash from the last eruption of Sunset crater, thus approximating the date of the eruption; (3) to secure datable beam material to extend the Douglass tree-ring chronology further back into the past; (4) to continue the study of Pueblo II in this region; and (5) to trace the evolution of Pueblo II into Pueblo III.

Dr. Colton and Miss Katharine Bartlett continued the Archaeological Survey, adding 250 new sites. As no adequate maps existed of the Little Colorado Valley, some time was spent on a plane table survey of approximately 300 square miles. On all previous maps the drainage systems, so important in an archaeological survey, are incorrect.

On May 1st, Mr. Lyndon L. Hargrave led a party into the field and established a permanent camp in Medicine valley as a good central point. Equipment and personnel were increased over 1930. (1) Five pre-eruptive sites of Pueblo I and II were completely or partly excavated, but no datable charcoal was recovered. (2) Sixteen post-eruptive pit houses of Pueblo II were completely or partly excavated. (3) Two pueblos of the transition between Pueblo II and Pueblo III were excavated. Ideal stratigraphic relations were discovered. The expedition closed its field work on October 1st.

The results of and the conclusions from the summer's work are as follows: (1) Sites of late Pueblo II and Pueblo III are most abundant in the area covered by the ash fall of Sunset crater. (2) As no datable timber was recovered from the pre-eruptive sites, the exact date of the Sunset crater eruption is still in question. (3) The excavations proved that the vestibule of the "vestibule house," an earth lodge, was never an entrance way, but either a storage room or a combined storage room and ventilator. Entrance was through the roof. (4) Further light was cast on the evolution of the pit house and granary into the kiva and pueblo. (5) Large "bowls" associated with some sites are apparently reservoirs for impounding rain water. Many artifacts were recovered belonging to Pueblo II or early Pueblo III. Although complete pottery specimens were found, the number of stone and bone implements was vastly more numerous. The cataloguing is not yet complete, but some 500 or more specimens were gathered. Besides the artifacts, about 700 specimens of charcoal are being catalogued and studied. From this beam material, eleven Pueblo II pit houses have been dated. Construction dates range from 880 to 969 A.D. These are the earliest sites in the United States that have been assigned dates in our calendar. In June, Mr. John C. McGregor joined the staff and has been working on the charcoal. The Douglass absolute chronology has been carried back a few years, and a new relative series of 250 years established which, at present, does not tie into the absolute series. The material has also been checked by Dr. Douglass.

Harold S. Colton,
Museum of Northern Arizona

The field work of Carnegie Institution of Washington, from July to October, in the Southwest was confined to an area about five miles square, at the extreme western edge of the Red Rock district of northeastern Arizona. The principal site explored was Broken Flute cave, situated at the head of a north branch of Atahonez canyon. This shelter is horseshoe-shaped with open side to the south, approximately 800 feet long and 60 in greatest breadth. Toward one end of the cave, there was originally a deep pocket of considerable extent. Charcoal in lumps of appreciable size is so prevalent down to the very lowest strata, at a depth of 13 feet, which

fill this pocket, that it seems unquestionable that the carbon resulted from fires made by man. Since the entire mass had been wet time after time, thereby decaying such perishable objects as might have been present, and since the components in imperishable media of Southwestern material culture prior to the advent of pottery are very few in quantity, the absence of flint and bone in the few cubic yards of the charcoal impregnated strata which were worked over by no means disproves the presence of man during the period of deposition. These strata, lying entirely beneath the Basket Maker III level of occupation, would seem to offer the possibility of proving human frequentation of the region in times ancient enough to be measured by thousands rather than hundreds of years. With the exception of one cross-section trench, the beds were left undisturbed with the hope that at some future time they would be adequately dissected. Aside from this deposit and minor areas which have been wet, or are deeply covered with rock fall, the entire cave was excavated, mapped in detail, and thoroughly photographed. The structures cleared comprise 15 large chambers and 65 storage cists. In many of the enclosures of both types, and over all areas which they did not occupy, there was a blanket of refuse from a few inches to several feet in thickness. This largest of all the dry shelters in the region yielded prolifically, both of information and specimens. In addition to Broken Flute cave, 16 smaller ones, distributed along Atahonez canyon and Black Horse creek, were excavated wholly or in part, as the nature of their contents dictated. Some digging also was done in the small open sites which are numerous on the ridges and knolls which fringe the narrow valleys composing the terrain. Aside from notes, maps, and photographs, there were gathered some 2000 objects, constituting 1421 catalogue entries. The most striking of the specimens are six long braided sashes of animal hair, two white, two black and white, and two brown. The white wool has been identified as dog hair, but the black and brown have not been positively accounted for. Less beautiful, but fully as important as the sashes, is a series of unfired clay vessels in a variety of shapes and sizes. Only fragments of such containers have been previously exhumed. Other outstanding features of the collection are two wooden flutes decorated with feathers, and several caches of beads and ornaments.

The season's activities reveal that the Red Rock valley was inhabited from beginning to end of aboriginal occupation of the San Juan area, of which the valley is a part. Culturally speaking, this is from Basket Maker II to the end of Pueblo III. The caves, however, were for the most part avoided by the later peoples. The sparse inhabitants of the Basket Maker II period left some evidence of their presence in the dry shelters. Throughout the next culture period, namely Basket Maker III, the caves fairly teemed with population, and there was left in them a full representation of the material arts of the age. The light that it has thrown upon this very important stage in the development of Southwestern culture is the chief contribution resulting from the field work of 1931, for it will enable not only a thorough description of Basket Maker III culture, but will also make possible the identification of specimens of Basket Maker III age present in the large mixed collections from other localities. Owing to the dryness of the caves, most of the timber used in house construction was excellently preserved, whether in natural condition or carbonized by

conflagration. In consequence, more than 300 sections of the varieties of wood suitable for the purpose were sent to Dr. A. E. Douglass for study in connection with his tree-ring dating of Southwestern ruins. There is no doubt that this large series, together with material of similar age already in his hands from other localities, will establish a definite time count spanning the entire length of the Basket Maker III period. While this will not connect with the nether limit of Dr. Douglass' present historic series which reaches back to 740 A.D. further excavation will eventually provide timbers to bridge the gap, thus extending the positive year for year chronology for the aboriginal cultures of the northern Southwest very near to, if not beyond, the beginning of the Christian era.

Earl H. Morris,
Carnegie Institution of Washington

During the early part of 1931, the Los Angeles Museum completed work on the Grewe site, Gila valley, Arizona, and a résumé of that excavation has been published as Occasional Paper No. 1 of the Los Angeles Museum. An archaeological survey was then conducted in the region of Black mountain, thence northeast to Oracle and down to the San Pedro river to determine if there were sites similar to the Grew site in other portions of the Gila. This resulted in the discovery of a number of these early type sites whose pottery, houses, and artifacts corresponded generally to those found at the Grewe site.

During the summer months, an archaeological survey was made of the area between the Black and White rivers on the Fort Apache and San Carlos Indian Reservations, for the purpose of ascertaining if, and to what extent, that region had been penetrated by the Hohokam, and also to plot and record the type sites and pottery of the region. All notes and shard collections have not yet been tabulated, but nearly 200 sites ranging from the single unit, stone outline types to extensive pueblo ruins and small cliff dwellings, were located and tagged. Special brass tags bearing a number and the initials "VBLAM" (Van Bergen-Los Angeles Museum) attached to aluminum pegs were left on each of the sites. No excavation was done, but it is well to note that this region, archaeologically unknown, will richly repay future detailed examination. A number of shallow agricultural terraces were found in the rocky arroyos on the north side of Ash flats, San Carlos Reservation. Fourteen were counted in one arroyo. These were constructed of stones set on edge with earth banked behind them, and were from 10 to 100 feet long and from 9 to 14 feet wide. Apparently the small, single unit cliff-dwellings high on the western walls of the sandstone cliffs bordering the northern edge of Ash flats had been the habitations of the people who built and used these terraces. Ash flats is a semi-desert valley, with springs along the foothills. The pottery fragments found in some of the cliff dwellings seemed to indicate that these same people were also responsible for the extensive pueblos found on the highlands further north in the vicinity of Circle prairie. This work was undertaken by Ben Wetherill, Dr. Van Bergen, and Arthur Woodward. Milton Snow accompanied the party as field photographer.

In the fall, the party returned to the Gila to make test excavations on a site

near the east base of Gila butte, on the Pima Indian Reservation, north bank of the Gila river, 10 miles south of Chandler. A series of trenches and test pits revealed that the site, as far as pottery and artifacts were concerned, was of the same period as the Grewe site. The pottery included flare-rimmed bowls, large jars, portions of legged vessels, and figurines. Paint palettes and arrowheads also corresponded to those of the Grewe site. A cremation area was uncovered which contained about 24 cremation pit burials, as well as pits which had apparently been used in the actual cremation of the bodies. The work in the Gila closed in December.

Arthur Woodward,
The Los Angeles Museum

Excavations were conducted by the University of Colorado at Solomonsville, Arizona, from November 20th to December 31st, 1931. Several small buildings were cleared, mapped and photographed, and from them a representative series of pottery vessels, stone, bone, and other artifacts were recovered. Most of the pottery belongs to the Middle Gila complex. However, in the lower levels of refuse found for the most part underneath the later dwellings, there were fragments of Mimbres ware, and some from Casas Grandes, from the Little Colorado, and from the San Francisco river region.

Earl H. Morris,
Carnegie Institution of Washington
University of Colorado Museum

Arkansas. During June and July, Mr. Winslow M. Walker, of the Bureau of American Ethnology, conducted a reconnaissance in the vicinity of Bilbert, Arkansas, in the Ozark mountains. During the progress of this work, he explored 16 caves, the most important of which was located at Cedar Grove. The excavation of this cavern yielded a large number of stone, flint, and bone artifacts, and several skeletons, one of which had an interesting deformation of the skull.

H. W. Dorsey,
Chief Clerk, Smithsonian Institution

The University of Arkansas Museum continued its explorations along the headwaters of the White and Buffalo rivers during the summer of 1931. The earliest cultures located are clearly those described by Harrington as Ozark Bluff Dwellers. The vegetal materials especially indicate a close similarity to those of the Basket Maker culture of the arid Southwest. These cultures were succeeded by peoples apparently possessing a Great Plains culture, who used bows and arrows, crude pottery, and stone mauls of the type found on the plains of Texas, Oklahoma, and Kansas. The field party also measured and photographed the remaining known pictographs and petroglyphs of the Ozarks. During February and March of 1931, sites were excavated in Mississippi and Crittenden counties. These yielded artifacts bearing representations of human beings, woodpeckers, and plumed serpents, as well as many "stairstep" designs that strongly suggest the culture found at Moundville in Ala-

bama. Some of the serpent designs would seem to suggest a possible influence wielded on this area by peoples of Mexico.

S. C. Dellinger,
University of Arkansas

With a crew of 17 men, the staff of the Alabama Museum of Natural History began excavations in the area of the Walnut mounds on Little river, near Manila, Arkansas, in August. One hundred and three burials, with which were associated 462 artifacts, were found during the two weeks' work. Of the artifacts, 208 were earthenware vessels, including 34 colored and many effigy vessels. Many interesting objects in flint and stone were also encountered. Nineteen finely-shaped arrow points of the willow-leaf type in groups of five, six, and eight, were found with three burials. Probably the outstanding object discovered was a human effigy of clay, representing the male in a sitting posture with hands folded over the knees, which are drawn back nearly to the abdomen. The ears contained four perforations, and the entire face was embellished with deeply incised decorative lines resembling the deepened wrinkles of an aged person. Both feet were apparently broken before interment. The figure was lightly coated with red pigment.

Walter B. Jones,
Alabama Museum of Natural History

California. Mr. Richard Van Valkenburgh, of the Los Angeles Museum, carried on excavations during the fall at the site of a Chumash fishing village near Redondo beach. A number of artifacts and several burials were found in the camp debris, which revealed materials demonstrating a sea food economy. Interesting data were secured concerning the details of fishing equipment.

Arthur Woodward,
The Los Angeles Museum

Owing to reduced finances, the San Diego Museum was unable to undertake major archaeological field work during the calendar year 1931. We were able, however, to devote one month's time to our archaeological survey of southern California, which has been under way for several years, and is now well on the way toward completion. As a result of this intensive and widespread survey, many problems have been elucidated. Certain culture boundaries and their geographical relations at different periods have been established, as well as directional culture diffusion. It was found that pottery-making was first introduced into California in the southeast corner of the state, and that it spread north up the Colorado river and west to the shores of the great prehistoric Blake sea, which once covered much of the Colorado desert. The association of intrusive sherds from the early Gila river cultures with this local culture indicates contemporaneity. Our researches, however, have suggested the possibility of an equally early or even earlier introduction of pottery in northern San Bernardino county, where Pueblo type sherds occur over a considerable area. Whether this pottery was made in California by colonists or was

brought in from the nearby Nevada Pueblo area is as yet a problem. Our survey has also disclosed a widespread pre-pottery horizon of a crude stone-flaking culture, a report of which is soon to be published.

Malcolm J. Rogers,
The San Diego Museum

Work of the desert branch of the Southwest Museum, situated at Twenty Nine Palms, California, consisted mainly of reconnaissance in San Bernardino and Riverside counties. Many caves and village sites were discovered and recorded, and a number of specimens collected, consisting mainly of pottery vessels, basketry and other textiles, together with implements of stone, wood, bone, horn and antler. A preliminary report of this work has been published. The reconnaissance was in charge of Mr. and Mrs. W. H. Campbell of Twenty Nine Palms, assisted by Mr. Edwin F. Walker, the curator of the desert branch.

M. R. Harrington,
The Southwest Museum

Colorado. The Department of Anthropology of the University of Denver devoted three weeks during the summer to supplementing the archaeological survey of the previous season. Work was concentrated in two areas: the Upper Arkansas valley from Canyon City to Fowler, and the northeastern part of Colorado, with a view to establishing close contact with the Wyoming field and western Nebraska.

E. B. Renaud,
University of Denver

From June to October, 1931, Dr. Paul S. Martin, Assistant Curator of North American Archaeology, spent a second season excavating in the Lowry ruin, in southwestern Colorado, under the auspices of the Field Museum of Natural History. The most interesting single fact ascertained this season was that the culture of the Lowry ruin is an offshoot of the Chaco canyon culture, the locale of which is nearly 300 miles to the southeast. This is indicated by the architectural plan, the construction methods, and the type of pottery. There are five separate building periods, and probably seven occupations, culminating in a terraced pueblo. The Chaco people were ultimately driven out, and replaced by Mesa Verde people, who made certain changes and additions. A cache of 17 pieces of pottery, most of them complete, was found in a small passageway. An interesting feature was the mural decorations on the kiva walls representing symbolical ideas. A spring was found which had been timbered and cribbed with cedar logs in prehistoric times. It seems to have served as a sanctuary, for in the water at the bottom were found offerings of 10 pieces of pottery and more than 40 modern prayer-sticks very similar to those used at present by the Hopi. The cemeteries have not been discovered as yet. As a result of this expedition, which was financed from funds provided by Julius Rosenwald and the late Augusta N. Rosenwald, 70 pieces of pottery, 400 potsherds,

bone tools, fragments of prayer sticks, and the necessary accompanying data were secured.

A. C. Simms,
Field Museum of Natural History

Connecticut. An archaeological survey of Connecticut is being pushed forward by the Department of Anthropology in the Peabody Museum of Yale University. Excavations were started in the autumn of 1931 by the departmental staff with the assistance of students taking archaeological courses. The first site studied was a cave shelter near North Branford. The material remains, found for the most part by screening, were such as might be expected. There was only one refuse layer which designated a short period or periods of occupation during early historic times. It is hoped that by stressing method, factual data may be acquired in an area where the remains of material culture are notably poor.

C. B. Osgood,
Peabody Museum, Yale University

Florida. Early in 1931, Mr. M. W. Stirling, Chief of the Bureau of American Ethnology, visited archaeological sites at Crystal river, Safety harbor, and Alligator creek. During February, he conducted a series of excavations on Blue Hill island, south of Key Marco. A large sand burial mound was excavated, and found to be of early post-Columbian Calusa origin. A number of unusual features were revealed. A clay floor, which gave evidence of having been the base of a temple structure, was found six feet above the bottom of the mound. This structure had subsequently been destroyed, and the mound enlarged by the addition of six feet more of sand. Numerous burials were encountered above and below the clay floor. Articles of European manufacture appeared in the upper level, but were absent from the lower horizon, suggesting that the older level antedates the historic period. Later, after a trip to Haiti to visit archaeological sites worked by Mr. H. W. Krieger, of the U. S. National Museum, Mr. Stirling continued his investigations in the eastern part of the state, and discovered an interesting series of geometric earthworks on the eastern side of the Everglades, not far from Indiantown.

H. W. Dorsey,
Chief Clerk, Smithsonian Institution

Illinois. At the beginning of the 1931 season, the University of Illinois field party continued investigations begun in the summer of 1930 in the Utica-Starved Rock region. No further excavations were carried out on Plum island, but a village one mile to the east of that site was studied. It yielded fire and refuse pits with pottery and artifacts similar to those found in the top levels at Plum island. Two mounds were explored on the south bank of the Illinois, in the Starved Rock State Park, just across the river from Plum island. Village site materials and scattered burials occurred in a small ridge near the mounds. Another mound at Henry, Illinois, some 15

miles west of Utica on the Illinois, was trenched, disclosing a culture strikingly different from that encountered in the Utica-Starved Rock region.

In July, the expedition moved to Jackson county, southern Illinois, with headquarters at Murphysboro. Mounds, village sites, bluff burials, stone cist graves, and pictographs were found in close association, centering about Fountain Bluff. Two village sites of a single culture were explored. Stone cist burials and extended burials occurred side by side in one of them. The cultural features of the Tennessee-Cumberland region predominate in this part of the state. Mr. Albert Carter recorded available rock carvings and paintings in Jackson county and adjoining regions. There is evidence that the pictographs of southern Illinois were once numerous, extending from Kentucky through Illinois to a point north of the Cahokia region.

From August to November, Mr. Gene M. Stirling directed excavations in another mound of the Cahokia group on the Powell farm, near East St. Louis. Some remarkable filled tunnels running in series obliquely through the mound structure have proven an archaeological puzzle. Underneath the mound large circular depressions, 30 to 40 feet in diameter and six to eight feet deep, which may be house-pits, are yielding the best collection of Cahokia pottery yet obtained. The sub-mound village culture reveals a Cahokia series uncontaminated by later and more recent cultures in the valley. Outside the mound occur intrusive burials from a distinct, though possibly related, culture.

Arthur R. Kelly,
University of Illinois

During the spring of 1931, the University of Chicago carried on minor excavations in the vicinity of Chicago, primarily for the purpose of training graduate students. About the middle of June, the regular field party, consisting of 15 graduate students and two supervisors, returned to Fulton county in central Illinois to continue work initiated last season. Three groups were kept on survey, locating and investigating the Indian sites of the county, and studying all local collections. Seven major excavations of mounds and four of village sites were undertaken, as well as many minor excavations. In all, about 150 skeletons were secured, in addition to objects of material culture.

The results of greatest interest were: (1) the finding of a stratified village site in which the "Hopewell" materials lay below and separated from a "bluff culture" of prehistoric age. This verifies conclusions of the previous year and gives us a tentative chronology of four cultures found in central Illinois. (2) Last year, nine skeletons were removed from the black sands underlying a large "Hopewell" mound. Since the physical type and culture differed from that in the mound, it was believed that a considerable time must have elapsed between the lower burials and the construction of the mound itself. A portion of the site was left undisturbed at the end of the field season of 1930. This was excavated during the summer in the presence of two geologists. About two feet below the base of the mound was found a fire level and a crude platform of stones. Still below this was a second fire level and slightly to one side, a human burial. Soil profiles which had developed in the

black sands ran over and through the fire levels and the skeleton, but had not developed in the mound. It is thus evident that the burials long antedate the construction of the mound, and that the profiles have appeared since the interments took place. The shortest time allowed by the geologists for the profiles is 2,000 years, and both were inclined to double that figure. (3) A mound of Hopewell type, lying in a crescent of similar mounds, yielded a central burial pit containing 30 skeletons. Despite their rather bad state of preservation, these bodies furnish us with the largest group from this culture yet found in Illinois. (4) Near the close of the field season, five sites, consisting of depressed circles with raised edges, were located. Time allowed for the excavation of only one, so that definite conclusions cannot be drawn at this time. There is, however, a striking similarity to the earth lodge.

Fay-Cooper Cole,
University of Chicago

Indiana. The preliminary survey being undertaken by the Indiana Historical Society and the Historical Bureau has proceeded, as originally planned, along the principal water courses, county by county. Glenn A. Black, of Indianapolis, made a survey of Greene county, on the west fork of White river, identifying 149 sites as camps, villages, trails, forts, and workshops, and 60 as mounds, though some of the latter are still recorded as problematical. The large Baker-Lowe "mound," from which considerable material has been taken at different times, was partially excavated, and shown to be a natural formation used as a cemetery. In another cemetery there was a deposit of refuse and of calcined human and animal bones six feet below the surface. Many articles of bone, stone, and shell were recovered from this site. Another excavation revealed a primary mound on which a sandstone tomb had been constructed. There were traces of three logs which might have served as supports to the roof stones of the tomb. While the skeleton was nearly entirely disintegrated, a copper ear spool and a copper celt deposited in a leather bag were secured. The only shell heap found in the county yielded one small sherd, radically different from those at other sites.

J. Gilbert McAllister, of the University of Chicago, undertook a survey of Porter county, finding little remaining evidence of reported sites. Pottery finds were confined to the banks of the Kankakee. An earthwork of two low concentric embankments, roughly semicircular, was studied. Seven mound sites were located: one containing at least ten tumuli, another four, and another three. In the vicinity of Boone Grove and Malden, mounds averaging about six feet in height and containing burial pits were located upon natural elevations. On the banks of the Kankakee, a sand mound was dug in which scattered burials were found. The material culture from both types of mounds, represented by articles of copper, shell, and stone, suggests a Hopewell influence. However, three complete Algonquian type pots were also found.

At Cedar Point, in Kosciusko county, Eli Lilly, of Indianapolis, conducted a separate excavation. In various former grading operations, from 10 to 14 Indian skeletons had been discovered at this site. The excavation in October revealed four

hearths of heat-cracked stone, varying in depth from 6 to 30 inches below the surface. A circular shell gorget about 2¾ inches in diameter was found in an infant burial, the bones of which were in very bad shape.

C. B. Coleman,
Indiana Historical Bureau

For six weeks during the winter of 1930–31, and seven weeks of the summer of 1931, the Buffalo Museum of Science conducted field operations near Cromwell, Indiana, where the skeleton of a mastodon was being excavated by members of the Richmond-Buffalo Museum expedition. The remains were found in a saucer-shaped depression of about 150 feet in diameter. It contained a 10 to 12 inch stratum of muck at the surface, an 8 to 10 inch stratum of peat, and a 2 to 7 foot stratum of clay underlain by a gravel formation. The skeleton rested on the clay, but protruded upward through the peat. The original find, a tooth, was ploughed out of the muck. Two dart points were found within a radius of 20 feet from the skeleton, one broken at the base, the other at the tip. One was buried in the peat about 14 inches below the ground surface, the other about 22 inches, on the clay where the mastodon skeleton rested. Charcoal was found scattered over the whole area of the excavation, on the clay, and under the remains. A log, about three inches in diameter, that had been burnt off, lay on the clay in a horizontal position. Quantities of large chips of wood were found under the skeleton and surrounding it. Below the mastodon remains, under the clay stratum and on the gravel formation, were tree stumps with the roots in place, and tree trunks associated with cones and needles. Pond snails and shells were found with the mastodon and at the lower, or tree, level. A few extinct species have been identified, but the larger part of them are recent.

Everett R. Burmaster,
Buffalo Museum of Science

In May, 1931, Dr. Moorehead of Phillips Academy, went to Indiana, spending three weeks on some minor excavations, during which one or two mounds were tested. He assisted the state authorities with reference to the selection of several mound groups to be preserved in state parks.

W. K. Moorehead,
Phillips Academy, Andover

Iowa. Desk work and care of the collected materials accounted for a large part of the activities of the State Historical Society of Iowa during the 1931 season, in addition to which, however, four short trips were made to points on the middle and upper Cedar and Iowa rivers. These brief surveys resulted in locating nine village sites, as well as seven groups of mounds in Hardin and Bremer counties made up of conicals and linears. These last are quite similar to the mound groups already reported for Webster and Boone counties in the Des Moines valley. Several local collections were put on record. In Linn county, two new rock shelters were discovered, one of which was partially excavated, the finds, as usual, proving to be of the Wood-

land type. Correspondents of the Survey reported Indian burials as coming to light in three places on the Missouri hills and two places in gravel pits near Stratford. As these were of types frequently recorded in Iowa, they were not given a personal examination by the undersigned. Mr. Ellison Orr made detailed studies for the survey of two bluff mounds and one cave with petroglyphs in Allamakee county.

Charles R. Keyes,
State Historical Society of Iowa

Kentucky. The Department of Anthropology and Archaeology of the University of Kentucky devoted the entire summer to the archaeological survey which has been in progress for the past six years. In many remote counties the survey was incomplete, and it was necessary to make a visit of exploration to each of these areas. The field party traveled some 3,000 miles and visited 68 county seats. So thorough was the work of the past summer that the state survey is now in preparation for publication. As a result of the season's work, many new sites have been discovered, additional information has been procured about other sites, the locations of which were previously known, and a number of sites have been located where it is thought exploration would yield large returns of information. While no specific excavations were undertaken during the summer, it is felt that the work accomplished was as important as anything which has heretofore been done in a similar length of time.

Wm. S. Webb,
University of Kentucky

Louisiana. Mr. Winslow M. Walker of the Bureau of American Ethnology made a brief survey along the Red river valley in the northern part of Louisiana. At Jonesville he made some excavations in the remains of buildings laid bare at the base of a flat mound which was being removed for use in road building operations. Mr. Walker left the state in September, but returned during November and December in order to visit mounds and mound groups throughout the northern part of the state. As a result of this survey, he found many worthy of intensive investigation.

Dr. John R. Swanton, of the Bureau, devoted considerable time in Arkansas and Louisiana to making an archaeological reconnaissance of various mounds and village sites.

H. W. Dorsey,
Chief Clerk, Smithsonian Institution

Massachusetts. During 1931 Dr. Moorehead did some excavating on Cape Cod, where Mr. Howard Torrey has conducted researches for a number of summers. The Department of Archaeology at Phillips Academy is encouraging local men with training in archaeology to study and develop the various regions in which they reside. The results are satisfactory, the work is carefully done, and the usual photographs, maps, and field notes are in evidence.

W. K. Moorehead,
Phillips Academy, Andover

Michigan. During the summer Dr. W. B. Hinsdale of the Museum of Anthropology at the University of Michigan made two reconnaissance trips covering the western part of the lower Peninsula and the eastern part of the northern peninsula, in order to verify reports of additional sites and to visit local amateurs. In July Dr. Guthe trenched a conspicuous small mound on the eastern shore of Lake Gogebic, near Irontown, in the northern peninsula. The center of the mound had been completely destroyed by vandals, but a handful of cord-marked potsherds, a copper awl, broken human bones in the fill of the old excavations, and traces of an ash layer at the base of the mound were secured. Later in the summer he dug two sand mounds in Oceana county, which revealed only meagre information associated with a few burials, and completed the excavation of a mound near Muskegon, which had been opened by local amateurs, who had encountered a child's burial with which were associated articles, including a complete pottery vessel, which indicated definite Hopewell influence.

Carl E. Guthe,
University of Michigan

Mississippi. The Mississippi Department of Archives and History cooperated with the National Museum, represented by Mr. Henry B. Collins, Jr., during a few days in January in a study of Indian village sites in the vicinity of Natchez. By a comparison of prehistoric potsherds collected from that region with sherds from the historic "Fatherland" mound opened by this Department last season, one of the chief villages of the Natchez tribe was definitely located as having occupied a bluff overlooking St. Catherine's creek about three miles southeast of the present city of Natchez, on the basis of the types of sherds and other artifacts found on the surface. Another site on Second creek, about 10 miles to the south, was shown by the same method to be prehistoric, although hitherto erroneously considered as the location of the White Apple village of the Natchez. The Department was represented by Moreau B. Chambers and James A. Ford.

Dunbar Rowland,
Mississippi Department of Archives and History

Nebraska. Dr. William Duncan Strong, of the Bureau of American Ethnology, conducted an archaeological and ethnological reconnaissance in Nebraska and the Dakotas during August and September. He visited many sites and made preliminary excavations in an important stratified site in western Nebraska.

H. W. Dorsey,
Chief Clerk, Smithsonian Institution

The Nebraska State Historical Society has continued its survey of archaeological sites during 1931. Work was done in the Loup river valley from 20 miles west of Fullerton to the mouth of the stream, and at isolated localities along the Platte

river, including sites near Clarke and Yutan. Cass and Sarpy counties were also visited and explorations made along Shell creek near Schuyler.

E. E. Blackman,
Nebraska State Historical Society

From the middle of February until the first of June the University of Nebraska Archaeological Survey, taking advantage of the mild spring weather, spent frequent week ends in the field. During the spring recess intensive excavation was started at a village site on the Loup river in Nance county and was continued for two weeks later in the summer. The village is marked by 57 refuse mounds as well as large quantities of broken pottery, bone, and shell. The refuse mounds were mapped and five of them trenched. Although there are no surface indications, systematic borings led to the discovery of two house sites, both of which were excavated. They were each approximately 30 feet in diameter, had 4 central and 12 outer posts, and an eastern entrance way. In accord with the traditional Pawnee house, the buffalo skull shrine was opposite the entrance of the one first uncovered. The only evidence of European contact consisted of a few pale blue glass beads and sheet copper. No evidence of the horse was encountered, although the refuse heaps were rich in the skeletal material of native animals. The ceramics, while similar in design, were of much better grade than those of the historic Pawnee sites studied. At a historic Pawnee village near Linwood, two houses, one partially superimposed upon the other, were uncovered. At Schuyler an earth lodge 50 feet in diameter, with four central posts, an eastern entrance, and eight rich caches, was opened. The site appears to be protohistoric, and, like the one in Nance county, yielded no horse bones. At Sweetwater on the South Loup, three prehistoric earth lodges were excavated. One was square, one circular, and another was of intermediate form, probably representing a transitional type. The decorative designs of the ceramics showed affinity to those of the square house and other prehistoric sites of the upper Republican river. But while the designs from both areas are similar, the technique of application is different. In the Republican river area, the design was applied by incision, while in the Sweetwater group, the cord-wrapped paddle was used. Bone work (especially fish hooks) and pipes likewise indicate southern contacts.

In general, the research of the past year shows: (1) that the ceramic art was highly developed throughout central and southern Nebraska, but deteriorated rapidly with the advent of the horse, and (2) that in this portion of Nebraska, at least, a Caddoan or proto-Pawnee group had been dominant for several centuries and became confined to a restricted habitat on the lower Platte and Loup rivers only in comparatively recent years. A survey trip by several members of the party concluded the summer's work, the itinerary including investigations on the Medicine creek at the forks of the Dismal and on a highly important and very ancient stratified site at Scottsbluff; a drive through South Dakota to the Plains Archaeological Conference at Vermillion; and a brief tour to certain Arikara sites on the Missouri. The field party included five university students, under the supervision of Dr. W. D.

Strong and the active field leadership of Mr. Waldo Wedel, and with the financial and scientific cooperation of Mr. A. T. Hill of Hastings.

Wm. Duncan Strong,
Waldo Wedel,
Earl H. Bell,
University of Nebraska

During 1931, the plans for archaeological field work by the Cook Museum of Natural History had to be partly curtailed. However, examination and reconnaissance work was done at several important sites in the Niobrara, North Platte, and Hat creek valleys in northwestern Nebraska. Owing to the heavy deposits in some localities where artifacts and fossils have been found in apparent association, their removal had to be temporarily postponed until more propitious conditions exist. One slightly modified "Folsom type" flint point was found in a site indicating considerable antiquity, at a spot where much work is needed.

Harold J. Cook,
Cook Museum of Natural History

While recently exposing a considerable part of an articulated skeleton of mammoth in Nuckolls County, Nebraska, Mr. A. M. Hastings, Director of the Hastings Museum, Hastings, Nebraska, and his staff encountered an artifact about midway beneath the left scapula of a mammoth skeleton. Mr. Brooking and another assistant, Myron Youngblood, were present when the find was removed by Junior Brooks before its nature was discovered. While it is unfortunate that the artifact was removed from the position where it was uncovered, the nature of the undisturbed matrix, its situation and the integrity of the discoverers exclude doubt of its original association with the mammoth skeleton. It must be regarded as contemporaneous. The formation in which the skeleton was found consists of stratified layers of sand and gravel of varying thickness, separated by thinner strata of sandy silt and dark gray clay or marl. The several feet of these deposits are overlaid with aeolian sand, capped with prairie loess, the overlying deposits having a total thickness of 16 feet. Layers of coarser sand and gravel are exposed below the skeleton to a depth of about 5 feet, where they disappear in the sands and boulders of a normally dry stream channel. At times this channel carries a large volume of flood water, and through undercutting and caving, both the skeleton and a vertical section of the deposit were exposed. This artifact is referable to the "Folsom" culture, and like points sometimes found elsewhere than the type locality, is crude in workmanship. The tip is blunted and the edges show evidence of hard usage.

J. D. Figgins,
Colorado Museum of Natural History

Nevada. The Southwest Museum has carried on comparatively little field work this year, although the excavation of Gypsum Cave in Clark county, Nevada, was completed during the month of January without changing materially the results

previously announced. The most important find during January was the discovery of another fireplace near the first in Room 1 beneath two unbroken layers of ground-sloth dung at a depth of approximately eight feet. The fuel had been ground-sloth dung for the most part, and the fire had been trampled on while still burning, if we may judge by scattered pieces which had scorched the ground where they fell. The lower layer of dung rested, without trace of burning, directly upon the remains of this camp-fire. A full report of this work is approaching completion.

M. R. Harrington,
The Southwest Museum

New Jersey. Last summer the New Jersey State Museum, with the cooperation of the University of Pennsylvania Museum, made a thorough examination of the Bevans and Moody rock shelters in Sussex county. Miss Dorothy Cross of the University of Pennsylvania Museum had direct charge of the work under the supervision of Dr. Henry B. Kummel of the Department of Conservation and Development. Both sites yielded varieties of stone implements, a few bone articles, numbers of animal bones and shells, and good collections of potsherds. No perishable materials were found. The deposits, both within the shelters and in the talus in front of them, indicated intermittent occupation over a considerable period. Although objects were found to a depth of two to three feet, there was no indication of cultural change. The Bevans shelter contained no articles of European manufacture, but a few European trade articles were found in the Moody shelter. The potsherds at Bevans indicate that the site had been occupied by the Delaware, particularly the Munsee.

Kathryn B. Greywacz,
New Jersey State Museum

New Mexico. The archaeological survey undertaken by the Laboratory of Anthropology in January, 1930, has been progressively continued and extended during the past year under the immediate direction of Dr. Harry P. Mera, Staff Archaeologist, with the assistance of Mr. Stanley A. Stubbs. During the year a considerable area was covered, including the Canyon Pintado, the upper Ojo Caliente creek region, the upper Chama drainage, the Petrified Forest National Monument, the upper course of the eastern Rio Puerco, the western Rio Puerco, parts of the middle Rio Grande area, and the regions east of the main mountain ranges of New Mexico. During April the survey staff attended the Gila Pueblo conference at Globe and visited numerous sites en route in the Verde valley and the Tonto basin. As a result of the year's survey 183 new sites have been classified and added to the Laboratory record, thus bringing the number of abstracted sites available for study at the Laboratory to a total of 680 sites.

During the month of May Dr. Mera and his assistants continued the reconnaissance and excavations, initiated in the fall of 1930, in the Guadalupe mountains of southeastern New Mexico, for the purpose of tracing, if possible, the limits of the so-called Basket Maker culture of that area, establishing the principal char-

acteristics thereof, and setting up its real sequence with later cultures. Excavations were conducted in selected caves throughout the length of this range during the present year with reasonable success, and a report is now in process of preparation by Dr. Mera covering the two seasons' work in this area.

A Dendro-Archaeological project, involving the drainage of the Rio Grande of New Mexico, was initiated by Dr. A. E. Douglass, of Steward Observatory, University of Arizona, and was carried forward under the immediate direction of Mr. W. S. Stallings, Jr. of our staff through a four-month period of field collecting and examination of material, prior to his departure for Tucson for the purpose of conducting his laboratory work thereon in close association with Dr. Douglass. The advisability of testing the climatic homogeneity of the area to be considered prompted a survey of living trees in various strategic parts of the Rio Grande drainage area, resulting in the collection of 324 specimens. In the Pajarito plateau a series was collected which might show effects of factors other than precipitation on tree growth. Pottery sequences were used as a working basis for dendrological collections. Following Dr. Douglass' original plan of the basic tree-ring sequence from known to unknown, borings were taken from beams in various historic structures of the region to augment collections previously made by Kidder and Douglass. The archaeological collections consist of a numerical count of 177 bags of charcoal and 257 specimens of wood, and comprise a series from the Later Glaze ware and "biscuit" pueblos, downward through the Glaze series to and including black-on-white sites, with scattered material represented from possible late Pueblo I or early Pueblo II sites in the northern Gallinas country. Laboratory studies now in progress by Mr. Stallings indicate that the collected material of the present year will yield a chronology back to 1100 A.D., if not earlier, and that the early material from the Gallinas country is not expected to crossdate with any other material collected this season. It is the wish of the Laboratory to continue Mr. Stallings in this tree-ring survey to its successful completion, because of the importance of establishing a tree-ring chronology within the drainage of the Rio Grande where variable factors not encountered in the earlier Flagstaff sequence set up by Dr. Douglass have already developed. The records of this tree-ring survey will, it is hoped, be made available in due course by publication.

Mr. Robert P. Merrill of Grand Rapids, Michigan, a volunteer member of the Laboratory staff for the summer of 1931, cooperated with the American Museum of Natural History in accomplishing an important transit-stadia survey of the Folsom quarry site, and in mapping, photographing, and reporting on areas and features adjacent thereto. In addition, he assisted Mr. Richard Snodgrasse in reconnoitering for further evidence of late Pleistocene man, particularly quarry sites of materials used in the Folsom points.

J. L. Nusbaum,
Laboratory of Anthropology

Continuing the survey work done in Arizona from May to July, the field parties from the Gila Pueblo moved to Reserve, New Mexico, on August 1st, worked up

the Tularosa and Apache creeks, and south down the San Francisco to Glenwood, adding 200 more sites to our total for the summer, and tying up with the work which I did in 1927 in the vicinity of Springerville and the Upper San Francisco around Luna. Late in August we moved over to the Upper Mimbres and collected on the Sapillo, the Upper Mimbres and south of Silver City in the Mangus creek drainage. September first we sent an expedition into eastern New Mexico, working up the Rio Grande from El Paso, through Alamogordo to Gran Quivira, thence east and south to Roswell.

Harold S. Gladwin,
Gila Pueblo, Globe, Arizona

The Logan Museum of Beloit College entered its third season in Southwest archaeology with five students of anthropology in a field party led by Paul H. Nesbitt. Work was resumed at the Mattocks pueblo ruin, a prehistoric village located in the upper reaches of the Mimbres valley. The completed excavation of the ruin was finished early in the month of August. Eighteen rooms were excavated, including two pit-house structures. Although a good deal of the data obtained duplicate those of previous seasons, additional information was obtained on the chronological age of Mimbres black-on-white pottery. In house types characteristic of the final phase of occupancy, Mimbres black-on-white ware was found in association with sherds of El Paso polychrome, Chupedero black-on-white, and Gila polychrome. In the earlier phases of Mimbres black-on-white development, these wares are absent. We must recognize, then, an earlier beginning for Mimbres black-on-white ware than for the above wares, which did not gain popularity, at least in the Mimbres valley, until the former ware was on the decline. During the latter part of August, several days were spent surveying the archaeological field near Alamogordo, New Mexico. A promising site was purchased here by the Logan Museum for future study.

Paul H. Nesbitt,
Logan Museum, Beloit

During the summer of 1931, a field party from the University of Minnesota consisting of four graduate students, one Senior-college student, my assistant Mr. Lloyd A. Wilford, Mrs. Jenks and myself, spent 15 weeks excavating at our Galaz ranch Mimbres site in southwestern New Mexico. Two large rectangular kivas were completely excavated. A part of the "North Kiva" had three habitation levels superimposed upon it. This kiva had excellently plastered walls and floor, and a few supporting red cedar posts were still imbedded in the walls. The other, or "Parrot Kiva" had walls of good rubble stone work, in which 63 red cedar posts were imbedded. Later house structures had been built over the entrance, but none had been constructed over the kiva proper. Two flat, polished green stone slabs were imbedded in the floor. Under one, a parrot had been buried. Around the neck of the bird were 82 turquoise beads, while around its legs were between 500 and 600 shell beads. Each kiva had a fireplace, sipapu, and an inclined entrance way,

but no evidences of ventilators, deflectors, pilasters, or side benches were found. A small pit-house type of kiva was encountered with a ventilator, but without a sipapu or an entrance way through a side wall. It had had two floors, each of which had its separate opening into the common ventilator shaft. Fragments of two slab-side circular structures were excavated which are reminiscent of an earlier culture stage—either Basket Maker III or Pueblo I. Partly below a dwelling of the rubble type, a pit-house structure was found whose floor partly covered a deep, circular cist, one of several, and a new and interesting architectural feature. Several hundred pottery vessels were recovered, including a larger proportion of early types of painted designs than before, four with polychrome decoration, four large flat cooking vessels, and four storage vessels. Although human skeletal material is badly disintegrated at this site, we saved 36 crania and a limited amount of other skeletal materials, some of which revealed evidence of injury.

Albert Ernest Jenks,
University of Minnesota

Mr. Edgar B. Howard, a member of the staff of the Museum of the University of Pennsylvania, excavated caves in the Guadelupe mountains of southeastern New Mexico. His researches resulted in most important data regarding ancient man in America, the results being the better documented inasmuch as much of the work was done in cooperation with Dr. Barnum Brown, paleontologist of the American Museum of Natural History. The principal cave lay on the eastern slopes of the Guadelupe mountains about 50 miles west of Carlsbad. It was extremely dry and contained eight feet of dust and debris. Typical artifacts of early Basket Maker culture were encountered on the surface and to a depth of 20 inches below it. Three burials were uncovered, one consisting of charred human bones within a fine-twined woven bag which was wrapped in an antelope hide. Beneath this, to a total depth of 7 feet, were found hearths, artifacts, and bones of extinct animals. Among the latter were species of bison, antelope, horse, camel, musk-ox, and California condor. Dr. Brown is now studying these intensively. Associated with bones of an extinct species of bison, at a depth of about 4 feet beneath the lowest Basket Maker burial, was found a hearth and a spear point of Folsom Culture type; a musk-ox horn was found at a slight distance away on the same level. The paleontological remains, especially those of the musk-ox, indicate very definitely that the climate of this region at that time was considerably more humid and colder than at present, and suggest an approach to glacial conditions.

J. Alden Mason,
Museum of the University of Pennsylvania

New York. The field group of Long Island Chapter, New York State Archaeological Association, has had an active season. The excavation of the village site at Noyack, Southampton, has been finished. The recoveries show a culture closely paralleling that of the site excavated by Harrington, Parker, and Skinner at Sebonac creek; some traits have been amplified, others more fully illustrated, and much in-

teresting pottery has been secured. It was here that W. W. Tooker, during the removal of a tree many years ago, secured his bone fishhook, long described as unique for the region. At this and other sites, we have found a number of such fishhooks, and also harpoons. A trait frequently encountered was the use of stone mortars in the firepits, apparently as griddles for the roasting of fish. Excavation was also begun by Goddard at a camp site in Riverhead, with some unusual finds. This will be continued next season.

Charles F. Goddard,
Long Island Chapter,
New York State Archaeological Association

During the month of April, 1931, the exploration of the Atwell Site, near Cazenovia, New York, was undertaken by a group of students from Syracuse University interested in North American prehistory, under the direction of Thorne Deuel, archaeologist in charge. In the camp refuse were found sherds from the well-known Iroquoian pottery forms with overhanging collars, and human portrait effigies at the corners, heavy celts of square section, a square-rimmed pipe-bowl, triangular projectile points, bone awls, and charred corn. The site appears to be late 16th century Iroquoian, probably Onondagan, and exhibits no evidence of white contact.

Thorne Deuel,
Syracuse University

North Dakota. During the past year, the State Historical Society of North Dakota has continued its survey of Indian village sites. A file of maps has been prepared, and a collection of artifacts was secured at each site if it was not already represented in the Historical Society's collections. A card index, filed by counties, is being prepared of all village sites, mounds, or other Indian works. Recently the Society has been able to secure title to the balance of the Huff Indian village site, one of the most interesting sites in the state, and a flint quarry on the Knife river north of Hebron. A large round or conical mound was found near Heimdal, North Dakota, and the Society was able to make arrangements for its excavation. An accurate chart of the mound was made while the excavation was in progress. Many objects of interest were found.

Russell Reid,
State Historical Society of North Dakota

A third expedition from the Logan Museum of Beloit College to the Missouri valley region of the Dakotas was led by Research Assistant Alfred W. Bowers, and aided by four anthropology students of Beloit College. An exhaustive survey was made of early Arikara and Mandan sites with special reference to pottery in an effort to clear up pertinent ceramic problems. Marked differences are noted in rim shapes, design, and methods of design application.

Paul H. Nesbitt,
Logan Museum, Beloit

Ohio. Mr. Robert Goslin, Assistant in Archaeology at the Ohio State Museum, spent three weeks at a village site near Huron, Ohio, during the month of July. The cemetery on this site was excavated during the summer of 1930. Mr. Goslin examined a number of pits and other deposits in the area showing signs of domestic activities. The site is especially interesting in that it seems to exhibit both Iroquoian and Algonquian features, and is situated less than a mile from two Hopewell type mounds which were completely examined in 1930. Rim-sherds show both the chevron mark of the Iroquois and the so-called Algonquian punctate patterns. Dr. E. F. Greenman made three or four trips to examine accidentally discovered burials.

E. F. Greenman,
Ohio Archaeological and Historical Society

Oklahoma. The Department of Anthropology of the University of Oklahoma did no excavation this year, but it has been engaged in locating and mapping archaeological sites in the state, and has received a grant of $100 from the University research fund to aid in this work.

Forrest E. Clements,
University of Oklahoma

Pennsylvania. The archaeological work of the Pennsylvania State Historical Commission, during the field season of 1931, was confined to finishing up work begun in 1930 near Safe Harbor, on the lower Susquehanna river. A total of 188 plaster moulds, together with charts, scale models, and photographic records of the prehistoric rock writings have been moved to the State Museum in Harrisburg. Sixty-eight of the groups of writings were drilled out of the river bed and carried to the Museum. The islands upon which they were found are now covered by 40 feet of water in the basin of the Safe Harbor Water and Power Corporation. The search for a mainland occupation contemporaneous with the first and second period petroglyphs was continued. Two large village sites were thoroughly excavated and recorded. Another site, partially explored and temporarily recorded as Algonquian in a 1930 reconnaissance, proved, upon being thoroughly examined, to have a secondary prehistoric Iroquoian occupation. Important physical remains were recovered from this site. Two hundred and sixty bell-shaped refuse pits, averaging five feet in depth, were excavated on a prehistoric Iroquoian village site near the river town of Washington Borough. A number of large pottery cooking vessels were recovered, together with numerous objects made of bone and antler, and a vast amount of animal bone. Twenty burials were recorded in the village layer. The expedition, during 1930–31, has carefully explored and recorded data on one prehistoric Algonquian site and one prehistoric and two historic Iroquoian sites.

Donald A. Cadzow,
Pennsylvania State Historical Commission

During 1931, several groups have done archaeological field work in Pennsylvania. The work at Safe Harbor, under the State Historical Commission, is reported

upon separately by Mr. Cadzow, its director; the Moravian Historical Society and local organizations have done some work near Wyalusing, Pennsylvania; the Cambria County Historical Society removed some rocks with pictographs from near Portage to their headquarters; Mr. Ross Pier Wright and sons, of Erie, have continued their studies; and the Museum of the University of Pennsylvania sent a worker to the Trenton Museum to cooperate in investigations near Bushhill, Pennsylvania.

Under the auspices of the Tioga Point Museum, and with the aid of a grant from the National Research Council, Mr. J. E. Griffin devoted two months to field work in the Upper Susquehanna valley, in and about Athens. The purposes of the field work were: to arouse the interest of the people of the locality in the wealth of aboriginal remains existing there; to demonstrate field methods to those interested in preserving these local remains, so that they might keep an accurate record of their findings; and to ascertain, if possible, the sequence of aboriginal cultures in the valley. The first location excavated was apparently an historic Delaware village site. The artifacts recovered consisted of the usual camp refuse, including potsherds, and bone and stone artifacts. Most of this material was obtained from refuse pits. The first of two burials found contained four rather large late Algonquian pots and a white clay trade pipe. At the time of the meeting of the Society for Pennsylvania Archaeology the field workers had uncovered, on the west side of the Chemung river just south of Athens, an Algonquian camp site from which two large pots were taken, and part of an Iroquoian burial ground. One of the six burials studied at the latter site contained a pottery effigy pipe with a human face on the front and rear of the bowl. The expedition also made an incomplete survey of the vicinity and located a number of sites which it is felt would be well worth investigating.

Frances Dorrance,
Society for Pennsylvania Archaeology

Tennessee. Mr. Frank M. Setzler, Assistant Curator of Archeology in the U. S. National Museum, spent part of September in western North Carolina and eastern Tennessee, examining a large private collection of artifacts from the former Cherokee country for the Museum, and watching for a few days the partial excavation of two village sites by local residents.

Walter Hough,
U. S. National Museum

During 1931 the East Tennessee Archaeological Society completed its study of three mounds on the McKenzie farm and did some excavation on the Anderson farm mound in Sequatchie county. Preliminary surveys were made at Citico, at the village sites and mounds on the Smith and Montgomery farms on the Tennessee River, at the Bailey mound and village site, at the two mounds on the Waite farm, and at the sites of several rock shelters along the Tennessee river.

Charles K. Peacock,
East Tennessee Archaeological Society

Texas. Mr. Frank M. Setzler, Assistant Curator of Archeology of the U. S. National Museum, was detailed to the Bureau of American Ethnology for the purpose of conducting an archaeological investigation in Texas. In the latter part of April he examined several sites at Victoria and Brownsville along the Gulf coast. During May he excavated four caves and one rock shelter on the Mollie B. Knight ranch in Presidio county. In one of the caves he secured a total of 70 specimens, including baskets, matting, cradles, sandals, beads, corn, gourd fragments, and one skull. No pottery was found, and there was nothing to indicate European influence. The coiled basketry found in the Knight cave differs from that of the Basket Makers of the San Juan area; other artifacts from the same caves resemble in some respects material found by Mr. Edgar B. Howard, of the University of Pennsylvania Museum, in sites in the Guadalupe mountains in northern Texas and southern New Mexico.

H. W. Dorsey,
Chief Clerk, Smithsonian Institution

During 1931, the University of Texas continued its archaeological research in that portion of the state which lies, roughly speaking, east of longitude 96° W. This region is heavily forested and is identical in environment with Arkansas and northern Louisiana. It contains rich evidences of a high type of village life. The pottery will compare favorably with that of any other part of the Mississippi Valley and is relatively abundant. Eight hundred specimens of complete pots were obtained from one burial place in Harrison county. Other elements of the culture of this region are in keeping with the pottery. Numerous village sites have yielded excellent stone artifacts, bone and shell ornaments, grinding stones, and other materials. In some instances we have been able to trace the outlines of house foundations indicating pole structures with wattle work, mud and thatch walls, and roof. Affiliations are chiefly with regions to the north and east, but there are traces of influences from the south and west. On the Red river, in Lamar county, we explored one village site and burial ground from which we obtained pottery of slightly different type from that of other parts of east Texas, as well as many gorgets and about 500 specimens of beads made of conch shell from the Gulf. One gorget has on it a human face, carved in relief, apparently indicating an effort at portraiture. We have done little more than reconnaissance work in other parts of the state this year.

J. E. Pearce,
University of Texas

The members of the Texas Archaeological and Paleontological Society worked in several parts of the state during the past year. Dr. Cyrus N. Ray studied the distribution of round and oval types of bedrock mortar-hole groups over a wide area. He also excavated two stone graves containing peculiar long-headed skeletons buried in a flexed position. In continuing his study of deeply-buried stratified sites, he discovered a hearth containing burnt stones and a thick layer of charcoal in one of the oldest and highest stream terraces. This hearth was exposed on the face of a

vertical bank, and was covered by five feet of horizontally stratified clays. Mr. E. B. Sayles continued his investigations of rock shelters in the vicinity of Abilene, finding pictographs and associated artifacts apparently indicating Basket Maker culture remains. Negative hand impressions outlined in red pigment were also found. He did some excavation in a series of prehistoric shallow trenches near Abilene, which were found to be eight feet deep, reaching a stratum of flint at that level. The dumps indicate that the mines had been worked intermittently over a long period. Mr. George C. Martin, of Rockport, continued his studies of Texas coast cultures. In September, he and S. W. Woolford, of San Antonio, headed an expedition into the little-known Big Bend region on the Rio Grande, where they found an unusually interesting rock shelter containing painted pebbles reminiscent of European finds. Mr. and Mrs. Alves and Colonel Crimmins have continued their work on rock shelters, pictographs and petroglyphs near El Paso. The work of Dr. W. C. Holden and Mr. Victor Smith is included under the reports of their respective local organizations.

Cyrus N. Ray,
Texas Archaeological and Paleontological Society

In March and June, 1931, Texas Technological College continued excavations started two years before in a slab-stone ruin on Antelope creek, about six miles south of its confluence with the Canadian river. The ruin is approximately 165 feet long and 60 feet wide. In some of the walls, which are of a heavy, substantial type of masonry, the slabs are set on edge, and in others the stones are horizontal. So far, about 20 rooms have been excavated. The work has been under the immediate supervision of E. J. Lowrey. Several additional months are required to complete this project. In June and July, 1931, an archaeological field class from this school excavated at the Pueblo site on the Tecolote river in New Mexico. The reason for selecting this particular ruin was to acquire data and material for a comparative study of the Panhandle-Canadian culture with the known Pueblo culture at Tecolote. A considerable amount of evidence indicating a similarity between the sites was secured.

W. C. Holden,
Texas Technological College

As a result of field work by the West Texas Historical and Scientific Society, 16 new sites have been added to the survey of the Big Bend region during the past year. This makes a total of 178 mapped locations. One hundred and fifty artifacts have been added to the museum collections, practically all from open camp sites.

Victor J. Smith,
West Texas Historical and Scientific Society

In continuation of the search for evidence of Folsom culture sites being conducted by the American Museum of Natural History, Mr. Richard M. Snodgrasse of the University of Chicago, special field assistant in archaeology, spent his third

season of work in the southern Plains. In northwestern Texas, he examined certain quarry sites near Amarillo, and in the vicinity of Lamar, Colorado, several sites were excavated. The most important sites were surveyed and mapped by Mr. Robert H. Merrill.This particular part of the project was in cooperation with the Laboratory of Anthropology in Santa Fe.

Clark Wissler,
American Museum of Natural History

Continuing the survey work done in Arizona and New Mexico, a field party from the Gila Pueblo on October 1 went into eastern New Mexico and western Texas to cover the eastern slopes of the Guadalupe range, thence south along the Pecos river to its junction with the Rio Grande, and, after casting a wide circle, thence north up the Rio Grande to El Paso.

Harold S. Gladwin,
Gila Pueblo, Globe, Arizona

Utah. During the summer of 1931, Albert B. Reagan, of the U. S. Indian Field Service, cooperating with the Laboratory of Anthropology in Santa Fe, continued his archaeological studies in the Uintah basin, in Utah. His finds apparently show that four somewhat successive peoples occupied the region in remote days: Basket Makers; Pueblos of the Uintah (Willard-Beaver) stage, extending in time from the dawn of Pueblo culture far into Pueblo II; a people who made round-bodied drawings of humans; and a peripheral people possessing a culture similar to Basket Maker III who, in time, acquired Pueblo traits and became the Pueblo II people of the Fremont culture.

Albert B. Reagan,
U. S. Indian Field Service

The University of Utah conducted archaeological field work in the state from June 26 to August 7. A Pueblo culture, probably Pueblo II, was investigated around Great Salt Lake; villages of single-room, pole-and-adobe houses being found at several sites. It was ascertained that rectangular adobe-wall houses had been built as far north as Provo. A number of caves on the shore lines of Lake Bonneville were studied in order to correlate early human occupation with the stages of this lake. Excavation at a large cave on Promontory Point, begun last year, was completed. A cave at Black Rock, on the southern side of the lake, yielded eight feet of stratified remains bearing evidence of human occupation, indicating the cave was first used as a shelter immediately after the retreat of the lake from this level—perhaps 8,000 to 10,000 years ago. This early culture may form a link between such cultures as the earliest in Gypsum Cave and the Basket Maker of the Southwest.

J. H. Steward,
University of Utah

The archaeological reconnaissance of the basin of the Colorado and Green rivers in Utah, begun by the Peabody Museum in 1927 under the Claflin-Emerson

Fund, was carried on in northeastern Utah during this past summer. Beginning at Green river, Utah, the expedition covered both the east and west Tavaputs plateau, Nine Mile canyon, the Uinta basin to the foothills of the Uinta mountains, and the Ashley and Brush creek drainages. The remains of Pueblo cultures were found over this whole area. An atlatl and other Basket Maker artifacts, together with a long-headed skeleton, were uncovered in Nine Mile canyon. Throughout the Tavaputs plateau, both east and west of the Green river, were found granaries, habitation sites under overhangs, and open sites consisting of circular structures. The masonry of the latter was crude, but showed definite attempts at coursing which were limited by the undressed nature of the stones. In Nine Mile canyon (incorrectly called Minnie Maud on most maps), the greatest development in this area was discovered. Basket Maker remains occur in caves near the canyon floor; crevices and ledges in the cliffs hold many granaries; and on the points and promontories jutting out into the canyon are open sites, the masonry of which is, on the whole, superior to that of the rest of the region. Along the cliff walls, near the floor of the canyon, are many groups of pictographs. At the southern extremity of the Uinta basin, just south of the town of Myton, rock-shelter sites occur, mostly under large boulders. There are many pictographs on the boulders and cliff walls of this region. On Rock creek, north of the town of Duchesne and west of Talmadge, a village site with abundant potsherds was found. Just east of Roosevelt, in the drainage of the Uinta river, are the remains of wattle-and-daub walled houses which at times seem to have been supplemented by masonry foundations. Clay hearths were found here. Sites identical with these were found to the west of Vernal. North and northwest of Vernal in the Ashley and Brush creek drainages are pictographs, granaries, open sites, and caves. Some of the overhangs are exceptionally large and all of the caves are sandy. Dew-claw moccasins and many baskets have been found in this region. The last section visited was in the vicinity of Jones Hole, near the Colorado line on the Green river, where cave sites and pictographs were discovered.

In November, work was commenced under Mr. J. O. Brew at a site on Alkali ridge on the west side of Montezuma creek in southeastern Utah. The purpose was to excavate in search of Pueblo II material, and to make an extended study of this relatively less well-known period. Unexpected snowstorms stopped work after two weeks, but one house unit with kiva was completely excavated, showing an interesting masonry sequence from vertical slab to horizontal coursing. We hope to resume work here this spring.

Donald Scott,
Peabody Museum,
Cambridge, Massachusetts

Wisconsin. The extensive archaeological collections of the State Historical Museum of Wisconsin were increased by gifts and by specimens obtained through field research. During the University summer session, a large number of students took part in the excursions conducted by the Museum to mound groups and other

prehistoric and recent Indian sites and monuments. University students also assisted in the examination of mounds in several Wisconsin counties, including four earthworks in Dane county. A survey of the river region between the Madison lakes and the Rock river was completed. The Museum continued the location of the trails of the state, several of which were marked with tablets.

C. E. Brown,
State Historical Museum of Wisconsin

Because of the financial stringency, the Wisconsin Archeological Society has this year relied more than even before upon individual workers and municipal and county museums in continuing the work of the state survey. Printed instructions and report blanks have been distributed to a number of interested persons not members of the state society. Mounds and graves have been excavated in several counties and a number of previously unrecorded camp and village sites, planting grounds, sacred springs, stone shrines and local trails have been located. Attention has been given to several projects involving the preservation of additional groups of conical. effigy, and linear mounds. Markers will be provided for these by individuals and local organizations.

C. E. Brown,
Wisconsin Archeological Society

Eighteen mounds of an effigy group, situated near Bee Town, and two conical mounds near Cassville, of unclassified culture origin, were excavated during the summer of 1931 as the result of Milwaukee Public Museum investigations in Grant county, Wisconsin. A sufficient number of traits was determined for the effigy mounds to establish their close cultural affinity to previously examined effigy mounds in Wisconsin. An unusually large quantity of skeletal materials was secured for the Museum osteological collections, derived for the most part from a single reburial of disarticulated bones representing 35 individuals. An archaeological surface survey was completed for northwestern Grant county. In addition to this work, a village site on the shores of Lake Winnebago, recorded as an old Winnebago site, was excavated. A large study collection of material culture detritus was produced. It is expected that a detailed study of these materials will contribute greatly toward establishing the culture status of the prehistoric Winnebago.

W. C. McKern,
Milwaukee Public Museum

Archaeological field work has been done during the past year by representatives of several local organizations. The Neville Public Museum at Green Bay has continued the local archaeological survey reported last year. Mounds were examined in Lincoln, Oconto and Brown counties, and stone cairns were studied in Door county. A field meeting of the Brown County Historical Society was held. An officer of the Oshkosh Public Museum made excavations at a local village site which yielded numerous stone, bone and other artifacts and information. The Chain

o'Lakes Protective Association at Waupaca has completed a survey of the shores of the 21 lakes of the Chain, gathering information on the archaeological sites, trails, physiography, Indian place names, and history, myths and legends, and early maps of the area. An illustrated report has been published.

C. E. Brown

Wyoming. This past summer the University of Denver and the University of Wyoming collaborated in sponsoring the first season of an archaeological survey of eastern Wyoming. The director was Dr. E. B. Renaud; the field assistants were students—two from the University of Denver, two from the University of Wyoming, and a volunteer from Arizona. Seven weeks were spent exploring carefully selected districts in southeastern Wyoming, between Colorado, Nebraska, and the towns of Lusk, Casper, and Medicine Bow in Wyoming. Some 200 sites were visited and collections of stone artifacts made. A long reconnaissance trip was taken covering the northeastern part of the state. An extra week was spent studying a large group of remarkable pictographs in central Wyoming, for Science Service.

E. B. Renaud,
University of Denver

Alabama Anthropological Society	Alabama
Alabama Museum of Natural History	Alabama, Arkansas
American Museum of Natural History	Texas
Arizona State Museum	Arizona
Buffalo Museum of Science	Indiana
Bureau of American Ethnology	Alabama, Arizona, Arkansas, Florida, Louisiana, Nebraska, Texas
Cambria County (Pa.) Historical Society	Pennsylvania
Carnegie Institution of Washington	Arizona
Chain o'Lakes Protective Association	Wisconsin
Colorado Museum of Natural History	Nebraska
Cook Museum of Natural History	Nebraska
East Tennessee Archaeological Society	Tennessee
Field Museum of Natural History	Colorado
Gila Pueblo, Arizona	Arizona, New Mexico, Texas
Hastings Museum	Nebraska
Indiana Historical Bureau	Indiana
Laboratory of Anthropology	Arizona, New Mexico
Logan Museum, Beloit College	New Mexico, North Dakota
Los Angeles Museum	Arizona, California
Milwaukee Public Museum	Wisconsin
Mississippi Department of Archives and History	Mississippi
Moravian Historical Society	Pennsylvania
Museum of Northern Arizona	Arizona
Museum of the University of Pennsylvania	Alaska, New Jersey, New Mexico
Nebraska State Historical Society	Nebraska
Neville Public Museum	Wisconsin

New Jersey State Museum	New Jersey
New York State Archeological Association	New York
Ohio State Archaeological and Historical Society	Ohio
Oshkosh Public Museum	Wisconsin
Peabody Museum, Harvard	Utah
Peabody Museum, Yale	Connecticut
Pennsylvania State Historical Commission	Pennsylvania
Phillips Academy, Andover	Indiana, Massachusetts
Phoenix Archaeological Commission	Arizona
San Diego Museum	California
Society for Pennsylvania Archaeology	Pennsylvania
Southwest Museum	California, Nevada
State Historical Museum of Wisconsin	Wisconsin
State Historical Society of Iowa	Iowa
State Historical Society of North Dakota	North Dakota
Syracuse University	New York
Texas Archaeological and Paleontological Society	Texas
Texas Technological College	Texas
Tioga Point Museum	Pennsylvania
U. S. Indian Field Service	Utah
U. S. National Museum	Alaska, Tennessee
University of Arizona	Arizona
University of Arkansas	Arkansas
University of Chicago	Illinois
University of Colorado	Arizona
University of Denver	Colorado, Wyoming
University of Illinois	Illinois
University of Kentucky	Kentucky
University of Michigan	Michigan
University of Minnesota	New Mexico
University of Nebraska	Nebraska
University of Oklahoma	Oklahoma
University of Texas	Texas
University of Utah	Utah
University of Wyoming	Wyoming
West Texas Historical and Scientific Society	Texas
Wisconsin Archeological Society	Wisconsin

CARL E. GUTHE, *Chairman*

REPORT FROM THE UNIVERSITY MUSEUM, PHILADELPHIA, OF ARCHAEOLOGICAL AND ANTHROPOLOGICAL ACTIVITIES IN RUSSIA, 1931

The University Museum, Philadelphia, with the cooperation of the Peabody and Fogg Museums of Harvard, sent a representative to Leningrad during the summer of 1931 to make a survey of archaeological and anthropological activities

in Russia and to establish contacts for the exchange of information, publications, and notes.

Mr. Eugene Golomshtok, a former student at Kazan University and a graduate of the University of California, who was chosen for the mission, found that there has been an enormous amount of work done in Russia in the fields under consideration and that most of this is entirely unknown to the scientists of America. Since the revolution, all private collections have become the property of the State and at the present almost every little town has a museum as well as a local society for the study of the history and the peoples of the region. In 1925 there were some seventeen hundred of these organizations. Scientific expeditions are numerous; these vary in size from those such as the Yakutsk expedition, with about a hundred members and a duration of five years, to small groups of students with the local archaeologist as the leader, penetrating into all regions of Russia and Siberia. There exists already an enormous amount of fresh material so far unavailable in the Western hemisphere.

Mr. Golomshtok has arranged with the leading Russian institutions for the permanent exchange of publications, photographs of objects in museums, and of original manuscripts by leaders in various fields, as well as for the loan and exchange of collections. In addition, he obtained extensive data for the study of the Palaeolithic period of Russia, shortly to be presented.

Information pertaining to the most recent and important discoveries and activities was collected, photographs obtained, and leading authorities consulted. Among this material, fairly complete data were obtained on the so-called "Pazirík Burial" in the Altai, where an excavated tumulus revealed an unusually rich civilization of nomadic people, culminating in the splendid burial of the Khan. The furniture of the graves was beautifully preserved, due to the peculiar conditions of the eternal frost. Ten mummified horses with richly decorated trappings, the elaborately ornamented coffin, and a number of artistically as well as archaeologically valuable objects from this grave are now in the Russian Museum in Leningrad.

Materials and photographs were obtained illustrating such finds as the Palaeolithic statuettes of Gagárino, Maltá and Kosténki. Seven statuettes at Gagárino (Central Russia) were carved out of mammoth tusks. A considerable number of bone tools: needles, awls, and perforators; and flint artifacts: high scrapers and crooked cutters were found at this station in 1927. At Maltá (near Irkutsk, Siberia) flint implements, a well developed bone industry, many articles of personal adornment, and fauna such as mammoth, rhinoceros, Arctic fox, and reindeer, were found in 1928. Especially interesting are the large pendants in the shape of birds and one of a fish. Nineteen specimens of statuettes of women, carved out of bone, resemble considerably the European and the Gagárino type. Many have well pronounced steatopygy, pendent breasts, thin and weakly expressed arms, and other notable characteristics. According to newspaper reports a record number of upper Palaeolithic sculptures were discovered at Kosténki (central Russia) in 1931. Of the forty-two specimens, one is of especial interest: it is of stone, some 15 cms. in height, and represents a very primitive appearing creature. When viewed in profile, the

thick neck and protruding supraorbital ridges impress one with the similarity to the reconstruction of Neanderthal man.

Important discoveries have been made in Gagárino, Kosténki, and Timonovka (central Russia), of house pits which culturally correspond to what in Western Europe is called the Aurignacian period. P. P. Ephimenko, one of the discoverers, asserts that similar finds have been made in the past by non-Russian archaeologists who failed to realize their significance.

Bones found in the region of the Podkumok river (Caucasus) are those of a female about 55–65 years old; they seem to represent the easternmost find of the Neanderthaloid type, and certain characteristics indicate that the Podkumok find is nearer present man than other finds of the Homo Neanderthalensis.

The grotto Kiik-Koba (Crimea) yielded rich palaeontological material important for its dating. The presence has been established of mammoth, rhinoceros, giant elk, bison, wild horse, and other extinct animals. In the sixth layer, less rich in animal remains, hearths and the burial of a man were found. Both detailed study as well as association with the Mousterian-like industry indicate that the Kiik-Koba man was very near to Neanderthal man of Western Europe.

It is not possible to discuss at length here the various other discoveries concerning which information was obtained. Data were also secured on the work of the Ethnographical Theater and the Institute of the Northern Tribes, where living Chukchi, Yukaghir, Buriat, Goldy, Samoyed, Lopar, Tungus, and representatives of many other Siberian tribes are gathered in Leningrad for study and for the promotion of education.

A very complete ethnographical map, illustrating the distribution of one hundred and sixty-nine ethnic groups in the territory of U.S.S.R., together with a number of publications on the subject were secured. The rich collections of the Hermitage Museum (Scythian gold, Sassanids, Siberian and Caucasian bronzes), of the Russian Museum (ethnography of U.S.S.R. and archaeology of Minusinsk and Altai regions), of the Museum of the Academy of Sciences (large collections of ethnographical material from all over the world and the most complete material on the Palaeolithic period in Russia) were studied and considerable data obtained.

All this material, the personal contacts with the leaders in the various branches of the field, and the arrangements made with the State Academy of the History of Material Culture for the forwarding of data in the future, will enable the University Museum to present to American scientists valuable and hitherto unavailable information. This, as well as assistance in establishing preliminary contacts, is at the disposal of anyone interested.

AMERICAN ETHNOLOGICAL SOCIETY

Report of the Secretary-Treasurer, 1931

During the past year meetings have been held as usual at the American Museum of Natural History on the fourth Monday of each month, in conjunction with the

Section of Anthropology and Psychology of the New York Academy of Sciences. The speakers have been as follows:

February 23: Meeting omitted on account of holiday
March 23: Tauhau and the Mwadare, by Geza Roheim
April 27: Motion Picture: Trails and Monasteries in Northern Thibet, by Gene Lamb
October 26: A Summer's Field Work among the Papago Indians of Arizona, by Ruth Underhill
November 23: Religion of the Dakota Indians, by Ella Deloria
January 25: Motion Picture: Indians of the Highlands of Guatemala, by Ruth Bunzel

The membership of the Society has increased during the past year, the total being at present 153, as over against 146 at the end of the last year (exclusive of the Central Section). This membership is made up of life members, members, and fellows, all of whom receive the publications of the Ethnological Society, the *American Anthropologist*, the Memoirs of the American Anthropological Association, and the weekly notification of meetings of the New York Academy of Sciences.

The publication of the Society for the present year was Gunther Wagner's *Yuchi Texts*, a publication financed through the efforts of Dr. Berthold Laufer. The thanks of the Society are due him for making it possible to continue the series at the present time. For the coming year, $500 has been made available for publication from the funds of the National Academy of Sciences, to which the Society made application for funds in the control of their committee in charge of Grants in Aid of Research Publications. With this help, and with the balance on hand, it will be possible to begin the publication of Miss Ella Deloria's Dakota texts, which will appear during the present year.

The following ticket was elected for the year 1932:

President—Clarence L. Hay, American Museum of Natural History
1st Vice-President—Dr. Elsie Clews Parsons, Harrison, N. Y.
2nd Vice-President—Dr. Bruno Oetteking, Columbia University
Secretary-Treasurer—Carolyn Adler, Department of Anthropology, Columbia University
Editor—Professor Franz Boas, Columbia University
Directors—Dr. Clark Wissler, Dr. Gladys A. Reichard, Dr. Ruth Benedict

TREASURER'S REPORT
February 1, 1931–January 31, 1932

CURRENT FUND

Receipts

Balance in Current Fund, February 1, 1931		$1676.13
Sales through Stechert, 1931	$ 149.15	
Dues, Fellows, 1931	442.15	
Dues, Fellows, 1932	18.00	
Dues, Members, 1931	470.00	
Dues, Members, 1932	10.00	
Dues, Central Section	10.00	
Gifts to Publication Fund through efforts of Dr. Berthold Laufer	100.00	

through publicity drive	100.00	
anonymous	100.00	
Author's repayment on Memoir corrections	25.00	
		1424.30
		3100.43
Expenditures		
Dues to American Anthropological Assn.	724.00	
Lecturer's expenses (Dec. 1930)	10.00	
Publication of Memoirs XIII	1282.00	
Payment to agent for funds collected	35.00	
Postage, Secretary-Treasurer	10.00	
Assistance, Secretary-Treasurer	6.50	
Returned to permanent fund	446.00	
		2513.50
Balance in the Corn Exchange Bank		586.93
		3100.43

PERMANENT FUND

Statement of Assets and Liabilities

Assets		*Liabilities*	
3 N. Y. Mtg. Bond Co. Bonds (par value)	$3000.00		
Savings Account—Manhattan Savings Institution	492.30		
	3492.30	$0,000.00	
NET ASSETS PERMANENT FUND			3,492.30

RUTH BENEDICT
Secretary-Treasurer

REPORT OF THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON

The Anthropological Society of Washington at its annual meeting held on January 19, 1932, elected the following officers for the ensuing year.

President: J. N. B. Hewitt, Bureau of American Ethnology
Vice-president: Matthew W. Stirling, Bureau of American Ethnology
Secretary: Frank H. H. Roberts Jr., Bureau of American Ethnology
Treasurer: Henry B. Collins Jr., U. S. National Museum

Representative of the Anthropological Society to serve as one of vice-presidents of the Washington Academy of Sciences: N. M. Judd, U. S. National Museum

Additional Members of the Board of Managers: Biren Bonnerjea, Catholic University; George S. Duncan, American University; Herbert W. Krieger, U. S. National Museum; Frank M. Setzler, U. S. National Museum; William Duncan Strong, Bureau of American Ethnology.

The following is a report of the membership and activities of the Society since the last annual meeting, held January 20, 1931.

Life members		4
Active members		56
Associate members		6
Honorary members		23
Corresponding members		22
Total		111
Deceased during year		5
Associate	1	
Active	3	
Life	1	
Resigned, active		1
New Members, active		2

The financial statement (Treasurer's report) is as follows:

Funds invested in Perpetual Building Association	$1057.93
21 Shares Washington Sanitary Improvement Co., $10 par	210.00
2 Shares Washington Sanitary Housing Co., $100 par	200.00
Cash on hand	245.75
Total	$1713.68
Bills payable	5.80
Net Balance	$1707.88

Papers presented before regular meetings of the Society were as follows:

January 20, 1931. Two Small Pueblo Ruins in the Zuñi Region, by Frank H. H. Roberts Jr., archaeologist, Bureau of American Ethnology.

February 17, 1931. Archaeological Explorations on St. Lawrence Island, Alaska, by Henry B. Collins Jr., assistance curator of ethnology U. S. National Museum.

March 17, 1931. The Mound-Builder Cultures of the Upper Mississippi Valley, by Frank M. Setzler, assistant curator of archaeology, U. S. National Museum.

April 21, 1931. An Archaeological Reconnaissance of the Hawaiian Islands, by W. M. Walker, associate anthropologist, Bureau of American Ethnology.

October 20, 1931. Prehistoric Peoples of the Middle Missouri Valley, by Wm. Duncan Strong, ethnologist of the Bureau of American Ethnology.

November 17, 1931. The Cultural Background of the Present Situation in India, by Biren Bonnerjea, professor of Bengali and Hindustani, Foreign Mission School at Catholic University.

December 15, 1931. The Indians of the North Pacific Coast, by Edward Sapir, professor in anthropology, Yale University. This talk was the first in a series of five special lectures relating to the Indian tribes of western North America. The remaining four lectures were scheduled for the first part of 1932.

All of the meetings, with the exception of that held December 15, were in Room 42–43 of the New U. S. National Museum. The meeting of December 15th was held in the large auditorium of the same building. In accordance with the custom of several years' standing all of the meetings held in January, February, March and

April took place at 4:45 P.M. Beginning with the October meeting the time was changed to 8:00 P.M. The wisdom in this step was shown by the increase in attendance. Where the afternoon meetings had an average of 25, the evening gatherings passed the 50 mark. The special lecture by Dr. Sapir had an attendance of 160.

The Society was unfortunate in its loss by death of five members. Dr. George A. Dorsey, associate member, died March 29, 1931. Mr. Victor J. Evans, an active member, died February 1, 1931. Dr. George M. Kober, life member, died on April 24, 1931. Mrs. Louise Simpson, active member, died in March 1931. Dr. Herman F. C. ten Kate, active member, died February 4, 1931.

FRANK H. H. ROBERTS JR.
Secretary

BOOK REVIEWS

METHODS AND PRINCIPLES

Notes and Queries on Anthropology. Fifth Edition. Edited for the British Association for the Advancement of Science by a Committee of Section H. (xvi, 404 pp. 6 s. London: Royal Anthropological Institute, 1929.)

This is an excellent handbook for the ethnographer no matter how sophisticated he may be. It is full of suggestive points of inquiry, but is far less successful on methods of attack.

In this, the fifth edition, the material of earlier issues has been entirely recast. Especially is this true of the long sections on social anthropology, now made to include discussions of magic and religion. Less revision appears in those on material culture, according to the preface. Each topic, after a succinct presentation of its commonly occurring forms, becomes the focus for a series of skilful suggestions, points of inquiry rather than a catalogue of leading questions.

Even experienced ethnographers would do well to give the handbook at least a cursory scrutiny. They may well be reminded of the surprisingly wide range of topics which, alas, many of them habitually avoid. If the avoidance be due to a lack of precise knowledge of technical points, say of features of technology, the excuse no longer holds, for the collaborators to this volume have succeeded in presenting the essentials of technological processes in admirably intelligible form. We recommend as examples the sections on weaving, basketry, and designs. On the other hand, that on musical instruments, no matter how fine a logical classification it may be, seems nearly useless to the field man.

The book was gotten up primarily as a guide for laymen in the British colonies. This is manifest in the observations on methods of dealing with informants and in the lines of inquiry suggested. Undoubtedly they fit conditions and cultures in Africa, southern Asia, and Oceania, but there is a very real question how far the suggestions taken literally would help with an American tribe.

This raises the question whether there can be any adequate substitute for complete saturation with the cultures bordering on the people under investigation as suggesting what is to be inquired for. A recent experience in directing the field activities of a group of young people, willing and intelligent enough, demonstrated that their inability to elicit the details of native culture, or at least to do so with precision and speed, was due to their lack of specific knowledge of cultures in the surrounding area. A knowledge of what might be expected in any portion of the cultural landscape is an inescapable prerequisite, for which a questionnaire is no more than a mechanical substitute. It would not be fair to leave the impression that this handbook is mechanical; quite the contrary. But it would have been wise to stress the possibilities of interpolation from surrounding related cultures.

LESLIE SPIER

Die menschliche Gesellschaft in ihren ethno-soziologischen Grundlagen. RICHARD THURNWALD. *Erster Band: Repräsentative Lebensbilder von Naturvölkern.* (xxiii, 311 pp. Berlin und Leipzig: Walter De Gruyter & Co., 1931.)

This is the first volume of an announced five-volume work by the author which will deal with cultural anthropology from the ethno-sociological angle. The first volume deals with life and activity representative of certain chosen economic stages; the second volume will treat of the family, the third of economic activities, the fourth of forms of social and political life, the fifth of law.

A thirty-two page introduction reviews the fundamental problems of the ethnological approach. We know no more incisive, balanced, and convincing discussion than that of Dr. Thurnwald in these pages. He disposes of the contentions of the "historical" and the "culture complex" schools with a thoroughness that will be difficult to counter, if, indeed, there is any reply to his arguments. He shows that the much bruited "historical" reconstructions are non-historical, and that the devices so far suggested do not enable the ethnologist to reconstruct the past from a knowledge of the present.

The author divides his material into the topics of hunters and fishers, agriculturists, and the domesticators of animals—the keepers of cattle, camels, and sheep. The first-mentioned class includes such groups as the Eskimo, North Siberian tribes, and Bushman; the second includes many African tribes and the agriculturists of Oceania; the third includes the cattle-raising peoples of Africa and the herdsmen of Central Asia.

The material is well ordered and the descriptions are apt and clear-cut. There is an ample and well chosen bibliographical list. If the subsequent volumes maintain the high standard set by the first volume, Dr. Thurnwald will be credited with one of the best surveys ever made of the ethnographical field.

WILSON D. WALLIS

Entstehung und Verbreitung des Pfluges. PAUL LESER. (Anthropos-Bibliothek, hrsg. v. PP. WILHELM SCHMIDT u. WILHELM KOPPERS, S. V. D., Bd. III, 3. Heft. 676 pp., 22 plates, 351 text figs. RM. 36.80. Münster i. W.: Aschendorffsche Buchhandlung, 1931).

Paul Leser is of the school of F. Graebner, and in the foreword to his book presents the work modestly as a contribution to his master's unfinished investigation of the stratigraphy and history of the Eurasiatic *Hochkultur*. The modesty redounds to the author's credit; the reader will judge the book, *Stückwerk* though its author calls it, as the outstanding contribution to arotrography of this generation, impressive in its critical sifting and strict scientific discussion of an almost overwhelming mass of material.

Method and material are introduced by chapters on the parts and operation of the plow, and on the history of arotrographic investigation. The latter chapter provides a welcome opportunity for the exercise of the author's critical acumen. Of the numerous older writers whose works are put through his fine intellectual sieves, Richard Braungart (*Die Ackerbaugeräte . . .*, 1881; *Die Urheimat der Landwirt-*

schaft, 1912) is subjected to the most devastating adverse criticism, a criticism abundantly supported in detail throughout the first part of the book. Henri Chevalier (various papers, 1890–1920) is praised as having done the best work to date, in the collection of data from all parts of the world in which plows are used.

The *corpus* of the book is divided into two parts: the first and larger, comprising nearly four hundred pages, reviews the plows of the individual lands; the second part, which bears the title "Investigations of the history of the plow," occupies less than one hundred pages. This complete separation of material and conclusions is motivated (p. 47, fn. 145) by the citation of two highly praiseworthy reasons: in order (1) that the material presented may be more easily accessible to other investigators, and (2) that the reader may form for himself judgments concerning the history of the plow, and thus test the author's conclusions.

The material presented in the first part is naturally drawn from many sources. First, and comprising a good part of the material from Germany, which land is treated in most detail, is the fruit of the author's own observations, in the field where possible, and in museums; museums are relied upon for the first-hand information gathered from neighboring countries. For the greater part of the plow-using world the author is of course compelled to use literary sources. Meticulous criticism is applied to the last-mentioned, least dependable, evidence. Future investigators will supplement Leser's work by the addition of new material; they will find little to discard in that admitted by him.

The fundamental problem in the construction of the plow, namely the application of a tractive force to a working part operating in a lower horizontal plane, may be solved in various, apparently equally satisfactory, ways: typologic differences in the frame of the implement are therefore significant. The most important types recognized on this basis, to each of which a chapter in the "Investigations" is devoted, are (1) the "four-sided plow"—i.e., having a frame of four parts, the lower horizontal member of which forms the plow sole, the upper the beam—and (2) the plow in which the vertical offset from beam to sole (or to the plane of the share when a sole is lacking) is gained by a downward curve in the rear portion of the beam (*Pflug mit Krümel*). The wide dispersal of the four-sided plow is older than that of the *Pflug mit Krümel;* it has two principal areas of distribution, namely in northwestern Europe and in the Far East. Ancient connections between these widely separated areas are indicated by the distribution of other agricultural implements. The *Pflug mit Krümel* is interpreted as having originated in the Mediterranean region, and to have owed its dispersion thence, northward and eastward, to Roman influence. It is, however, older than the time of Roman dominance in the Mediterranean, having formed part of the cultures of the Etruscans and of the Babylonians.

> Nothing final can be said concerning the respective ages of the two plow forms. All that is certain, it seems to me, is that both are very old. In view of the very wide distribution of both forms, it is not improbable that both are older than the oldest definite evidence we possess (p. 526).

The author presents, in discussing the curved moldboard (chapter 2 of part 2),

the thesis he had already developed at greater length in his *Westöstliche Landwirtschaft* (Festschrift P. W. Schmidt, 1928, pp. 416–484), namely that this form of moldboard, which has so largely replaced the earlier plane moldboard in the Occident, was introduced into Europe from eastern Asia at about the beginning of the eighteenth century. Circumstantially, he makes out a very good case for the thesis; in view of the large amount of agricultural literature that saw the light in the eighteenth century, it seems to the reviewer that documentary evidence should exist. The willingness of the West to learn from China in matters agricultural in that century is abundantly attested.

On the question of the origin of the plow, the author firmly rejects E. Hahn's hypothesis of the original function of the implement as a phallic symbol, while rendering due credit to Hahn's distinction between plow culture and other forms of tillage. The prototype of the plow among simpler implements, according to Leser, was not the hoe, but the spade. Spades, or spade-like implements, with attached cords for drawing by a person, are cited from various parts of Asia, in the best-developed form from Korea. A plow from Japan, possessing neither beam nor evener, is presented as bridging the gap between "draw-spade" and the common form of the plow. The chain of evidence given is impressive, and constructed solely of considerations of morphology and distribution. The plow was invented but once, and has diffused from the uncertain locality of that unique invention.

It should not be judged from the above that the author has proceeded by the shortest route to his conclusions. These are presented at the end of the volume, and with engaging modesty. In the summary, "every limiting 'perhaps' and 'possibly' is omitted, which words would in fact have to be added to every sentence." The reader is specifically advised that what is presented in the summary is "not facts but hypotheses, whose correctness the reader may judge on the basis of the material presented."

The assembly of material in the first part of the book, while very large, is in the nature of things by no means exhaustive. Later investigators can place complete confidence in that which Leser has admitted, but will wish to add to his compilation. The reviewer takes the liberty of enumerating a few sources of further data from Baltic Europe:

With regard to north Europe, the most important omission from the bibliography, excepting possibly Bielenstein's *Holzbauten und Holzgeräte der Letten*, listed but marked as not used, is Gösta Grotenfelt, *Det primitiva jordbrukets metoder i Finland under den historiska tiden* (Helsingfors, 1899). In this work the inquirer will find as much as could be desired on the plows of Finland. Several plows from the vicinity of Åbo are illustrated, though not so clearly as might be desired, in Gabriel Nikander (ed.), *Det svenska Finland*, v. 2, pt. 1 (Stockholm, 1923), p. 14.

A good description, with illustration, of the plow used on Runö, in the Gulf of Riga, is given in Ernst Klein, *Runö, folklivet i ett gammalsvenskt samhälle* (Uppsala, 1924), pp. 297–298, figs. 140, 141. This source is much better, for the Swedish folk-remnant inhabiting the islands of the east Baltic, than Rhamm, whose material from Nuckö Leser uses.

Contemporary data for the eighteenth century are scattered through the writings of the Linnéan group. Linné himself gives illustrations and descriptions of south Swedish plows in his *Skånska resa*, p. 258 of the edition of 1750; and of both north Swedish and Finnish plows in *Iter Lapponicum* (Carl von Linnés ungdomsskrifter . . . utgifna af K. Vetenskaps-Akad., ser. 2 (Stockholm, [1888?]), pp. 26, 178, 194.

JOHN B. LEIGHLY

The Devil in Legend and Literature. MAXIMILIAN RUDWIN. (XVI, 354 pp. Chicago: Open Court Publishing Co. 1931.)

Dr. Rudwin has written half a dozen earlier "devil studies" in the past twenty years. All deal especially with the use made of the devil in French and German literature. The present volume is primarily a study of the literature of England, France and Germany. But the first three chapters deal with the origin of the Lucifer legend, and the number and names of the devils. Thus Dr. Rudwin proposes a definitely anthropological study. And in the realm of origins every anthropologist and every historian of religions knows that we cannot anywhere point certainly to an original unmixed race, or liturgy, or cult, or creed. So while Dr. Rudwin recognizes that in prechristian times ideas from Palestine, Babylonia, Persia and Egypt were blending to survive in the "devil" of the European Dark and Middle Ages, yet each of those earlier stages was already highly complex or composite. The "Ur-Devil" (to Germanize) is nowhere known to us, and never will be. Many scholars who study especially the prechristian world may complain that more time should have been spent in separating the above strands into their individual threads. No finality in that respect is at present possible.

On the other hand the immense body of material collected from relatively modern European sources has large anthropological value. We are really shown how an olden humanity incessantly blended and rearranged and borrowed ideas that seemed to make the unseen world a little more intelligible. In this incessant effort men cannot agree as to what is evil and what is good. There are millions of modern Americans who think the destruction wrought by cyclone, earthquake, or volcano to be the work of an evil personality: others count such the work of vindictive Goodness (!) hurled at evil men. An old negro, lamenting the destruction of all of his crop by frost was told, "This is the work of Providence, Pompey, and we must consider it meant for our good!" "Dat's just de trouble, massa! Sometimes I think dis yer Providence does mo' harm than good, sah!" Dr. Rudwin's collections form a valuable contribution to the history of such perplexities of the groping mind.

ALLEN H. GODBEY

Man's Own Show: Civilization. GEORGE A. DORSEY. (977 pp. $5.00. New York: Harper Bros.)

This book, which was completed just before Dr. Dorsey's death, attempts to explain man and his civilization as though the author was neither human nor civilized, but curious about everything.

The first section deals with origins. The beginnings of man are followed from Dryopithecus of Miocene times through the various fossil finds up to the modern races. Social usages and institutions are traced through animal behavior and the customs of the more primitive peoples. It is language, he finds, which has made possible social systems.

Religion is a phase of culture which has played a powerful role in civilization and which today sanctions the actions of hundreds of millions of human beings. Dorsey is so eager to show that religion is man-made, that he loses, for a time, the complete objectivity for which he is striving and takes issue with all who may hold counter-views. Thus he finds himself at odds with the Pope, Plato, Billy Sunday, Compton, Millikan, and Mary Baker Eddy.

His review of civilization, from the early developments along the Nile and the Euphrates, through Cretan, Greek and Roman times is beautifully written and is in many respects the best part of the volume. Greece fares rather well in the story for

> the energy the Jews spent in theology the Greeks spent in philosophy (which began as science) or in art (which demanded science).

Rome on the other hand fares badly at Dorsey's hands, but his chief fire is reserved for Christianity. This religion he claims has tended to hold civilization static from the time it became entrenched as the state religion of Rome. Here he recites the stories of the Inquisition and the repressive measures of the Church toward most scientific discoveries.

The hope for the future lies in Science which has as its objective "the transformation of human society,"

> it alone is the measure of progress, alone seeks the light and eternally wars on darkness and the supernatural.

The growth of the physical and biological sciences is traced with a rush of facts. He digresses, and brings to bear on his topic materials gathered during his own long experience as a field worker in science The terseness which characterized his *Nature of Man* is entirely lacking in this volume, yet one feels that he has but touched upon an inexhaustible fund of information.

Despite all repressive measures created by man, we have developed a great civilization, so great that

> we who are in the midst of it can hardly realize how great it is, so new is it, so rapidly does it change and advance before our eyes and under our very feet.

It is not expected that anyone will agree with all of Dr. Dorsey's statements and conclusions. Many will disagree with most of his major premises, but the open-minded student will find here a vast fund of information, and a challenge to take stock of himself.

FAY-COOPER COLE

AFRICA

The Bavenda. HUGH A. STAYT. With an introduction by Mrs. A. W. HOERNLE. (XII, 392 pp., illustrations, map. Published for the International Institute of African Languages and Cultures by Oxford University Press, 1931.)

The International Institute of African Languages and Cultures is to be congratulated on the publication of a volume that adds greatly to our knowledge of Africa. The author, who was born in South Africa, was blinded in the Great War; he studied anthropology at Cambridge and at Cape Town, and then with amazing courage took up field work. He returned with his wife to the country in which he had been brought up, and was there greeted by the natives as an old friend, a fact which contributes greatly to the wealth and reliability of his material. His book contains little theoretical discussion, but an excellent cultural picture is drawn of a highly organized Bantu people based on a clear description of all the more important activities.

The Bavenda are a mixed people, welded by a strong political organization into a nation speaking a single language. Mrs. Hoernle, who writes an introduction, regards the Bavenda as the most recent arrivals from the north in the Union of South Africa. Tradition traces their migration from a country north of the Limpopo; the Mashona god of the firmament, Mwari (called Ralunhimba by the Bavenda), is regarded as the "grandfather" of the chief, a yearly emissary being sent to him for rain to the Matopo Hills, some 200 miles to the north. Nevertheless, cultural influences from the south have profoundly influenced the people; for instance, circumcision was introduced only at about the beginning of this century with conscious political intent, much of the ritual being borrowed from the Basuto. Mr. Stayt considers, however, that it was the Balemba who introduced the custom to the Bavenda, and Junod also traces its introduction at an earlier date among the Bathonga to this source. Social and political pressure is tending to spread the custom, but, in spite of seclusion in the lodges accompanied by secret ritual, it is not an initiation ceremony, nor is it regarded as a necessary antecedent to marriage. Circumcision may be performed singly or in groups, and at any age; indeed grown men are frequently seized and forcibly circumcised. The attendance at the same lodges with the Bavenda of Basuto, Ba-Pedi, Ba-Thonga, and Balemba, is a powerful agent in cementing intertribal bonds.

The spread of circumcision is weakening the attendance at the indigenous *thondo* schools. These latter were perhaps originally aristocratic institutions, but now should be attended by all the boys of the tribe from 7 to 8 years of age up to puberty. The training is mainly military, but includes a complete education, with some crafts, dancing, and instruction in etiquette. The schools are in charge of a councillor, and are visited regularly by the chief. On reaching puberty a boy goes through ordeals in the "washing away of boyhood" ceremony. He emerges a responsible tribesman, member of an age set, ready in the old days for military service, now frequently to perform labor for his chief. Girls also go through training and initiation. In these customs, as in many other of the beliefs and practices of this people,

distinctive characteristics are displayed of an extremely logical and practical nature. The final phase of education of the Bavenda youth is of a quite unusual type; both sexes attend a *domba* school, where instruction is given in all that concerns marriage and childbirth. Symbolic plays are enacted, and the initiates execute the python dance throughout the whole of the last night without stopping. In the morning a ceremonial coitus is enacted under a blanket by a chosen pair of initiates, then a final ordeal is endured, and the initiates rush to the river to soothe their agony of irritation. Anyone dying before the completion of these ceremonies is buried without rites, the spirit being impotent for good or evil.

The social organization of the people is described and analysed by Mr. Stayt with great care and insight, so that Bavenda custom can be seen against a background of cultural and religious belief. Thus, the attitude towards cattle, the marriage laws, the ritual behavior in the presence of disease and death, all hang upon the division into lineages, and to the Muvenda rest logically upon his physiological beliefs. In common with all Africans, ancestor cult is the important working religion of the people; the child inherits his bone from his father and his blood from his mother, and—since diseases of the bone are rare—illness (when not brought about by witchcraft) is due to disturbance in the blood or flesh, hence the enormous importance of the mother and of her ancestors in the female line. The extended family in the father's line is the basis of social organization; descent, inheritance, and succession are patrilineal, and marriage with both types of ortho-cousin is forbidden, yet the mother's lineage is always recognized and is probably more important from the religious point of view than the father's, the reason being that the spirits in the mother's line can protect descendants from the machinations of witches. Possession by ancestral spirits, often by those of very remote ancestors, is now tolerably common, but the author states that this belief was rare before 1914 and has been introduced from Southern Rhodesia. Among the Bathonga possession by spirits is also said to be introduced, but the spirits that possess the Thonga are Angoni, not ancestral. It is a pity that Mr. Stayt has not given his evidence for the introduction among the Bavenda of spirit possession.

As among the Basuto and some Nilotes, a barren widow may raise up offspring to the dead by "marrying" another woman, and the physiological father of the children is of no social importance, but since an unmarried man cannot leave a spirit potent to harm his relatives it is not necessary to provide a wife and children for a dead brother, as among the Dinka. The Bavenda, however, carry the practice of women "marrying" women to a degree unknown among the Nilotes, for any woman of property (and in the matter of owning property women have fuller rights among the Bavenda than probably among any other Bantu people) may by the proper payment of *lobola* marry any number of women, who become her servants, whose children belong to her and address her as "father."

The position of Great Wife and Queen Mother is of great importance throughout Bantu Africa; here we wish Mr. Stayt had been more explicit, for in this as in so many other matters the Bavenda have their distinctive customs. The paramount chief is supported in his duties by a specially appointed brother and sister, whose

main function during his lifetime is to appoint the heir, and a brother and sister to replace themselves. The sister of the former chief becomes the *makhadzi* (father's sister) of the reigning chief, and it is she who is the woman of first importance and to whom royal honors are paid. Of all the women in the royal family the marriage of the *makhadzi* alone is restricted; she must either marry into the royal blood (i.e. contract a union within forbidden degrees), or marry a foreign chief. For political reasons the latter type of marriage is encouraged. The paramount chief, however, must marry at least one wife within forbidden degrees, for the heir must be a member "of his own royal family."

> As well as belonging to the royal family, the woman who is to be the mother of the next chief must have been given to the reigning chief by his father and labola-ed with the royal cattle. . . . Sometimes a chief's wife is addressed . . . as *makhadza* (father's sister), adding another source of confusion to the difficulties that already exist [in] . . . attempting to differentiate the various people called by this term . . . possibly it used to be a marriage injunction for the chief's sister to be his great wife.

Thus we do not know whether incestuous unions are allowed to all members of the royal family, as among the Bunyoro and Banyankole, or only enforced for the sake of producing pure-blooded heirs. It would be interesting to know whether incest is permitted in the families of petty chiefs.

The restricted type of cross-cousin marriage prevalent among the Bavenda seems undoubtedly connected with the right of a man to his wife's brother's daughter, who is however usually taken by his son. Either type of marriage (but naturally not both) is allowed, but the cross-cousin type is more common. The opposite type of cross-cousin marriage, that with the father's sister's daughter (by an unfortunate slip stated as "son") is rare, and usually regarded as wrong. It would be interesting to know the reason for the feeling against this marriage. Is it merely disliked because a girl is really pledged to her father's sister's husband or to his son, and so her mother's brother's son has no right to her, or does a man feel that there is a barrier of an incestuous nature between himself and his father's sister's daughter, which does not exist between himself and his mother's brother's daughter?

The publication of Mr. Stayt's volume was assisted by a grant from the Rivers Memorial Fund (I believe the first work to be assisted by the fund); it is then particularly gratifying to find the kinship system and the functions of relatives, to which Rivers attached so much theoretic importance, treated with understanding. It was the impetus given by Rivers in this country to the study of kinship that has caused a great advance in our knowledge of social organization, even though we have drawn away from many of his conclusions.

BRENDA Z. SELIGMAN

The Khoisan Peoples of South Africa, Bushmen and Hottentots. I. SCHAPERA. (25 s. London: George Routledge & Sons, Ltd., 1930.)

This book is the first in a series of eight volumes entitled *The Ethnology of Africa*. Under the editorship of the author of the work under review and Mr. J. H.

Driberg, it is planned to have this series give a general picture of the ethnology of that continent. Certainly Africa is a region for which general works are badly needed. In recent years, there have appeared a great number of books of varying degrees of excellence, dealing with single tribes or the peoples of very restricted areas. The vast number of cultures in Africa, however, makes it almost impossible to draw any large view from these specialized works, which are, in addition, too often ethnologically unimportant. One can heartily concur in the statement of the editors that

> all this information needs to be sifted and correlated before it will be possible to arrive at a correct appreciation of the data and problems of African ethnology.

This first volume sets a high standard for the series as a whole. Dr. Schapera, in his presentation of the life of the Bushmen and Hottentots, has ranged far and wide through the literature on these two peoples. The bibliography, which comprises almost seven pages of titles in small type, shows how much interest has been manifested in these two groups which represent, it is true, some of the ethnological curiosities of mankind. In going through this list, one is impressed by the amount of careful research carried on in recent years by the South Africans themselves, as indicated even in their restricted field by the titles after the names of Miss Bleeck, C. M. Doke, S. S. Dornan, H. J. H. Goodwin, Mrs. Hoernle, and, among others, Dr. Schapera himself. However, Dr. Schapera does not confine himself to modern investigations, but draws with telling effect on the accounts of the early travellers, who knew these people before their civilizations had become as pathetically broken, through contact with European cultures, as they are today.

The title of the book takes its name from a term recently employed by Schultze to designate at one time both Bushmen and Hottentots. "Khoisan," we are informed, is compounded of the names Khoi-Khoin, the name by which the Hottentots call themselves, and San, used by the Hottentots to designate the Bushmen, who give themselves no collective name. It is a useful term, particularly in view of the thesis which Dr. Schapera supports here and has presented in earlier papers, that the Hottentots and Bushmen represent branches of a single stock.

The volume is divided into four parts, the first dealing with the ethno-geography of the Khoisan region, the second with the Bushmen culture, the third with the culture of the Hottentots, and the fourth with the Khoisan languages. For the ethnological problems of South Africa, the first part is the most significant, while the second and third parts give the ethnographer a compact picture of the two cultures.

In opening his discussion of the racial history of the Hottentots, Dr. Schapera makes his first comparison between the two groups he is considering. Bushmen and Hottentots are, he says,

> unquestionably allied in race, and, indeed, in appearance and bodily characteristics resemble each other so closely as to have often been confused. There are certain features, such as stature and shape of the head, in which the Hottentots are actually found to differ somewhat

from the Cape Bushmen, but differences of the same nature exist even between the Northern Bushmen and those of the Cape.

He also finds similarities in their languages:

> Their speech has the same phonetic basis . . . ; many roots in the Hottentot languages are found with the same meanings in various Bushman languages; while in grammatical processes and categories there is also a fundamental correspondence . . . (p. 41).

In culture, we are told, the differences between the two peoples are more apparent. The Bushmen are hunters and food-gatherers, the Hottentots are also herders. The latter work iron, which the Bushmen have never learned to do. The Bushmen, on the other hand, have a graphic art that stands out as one of the achievements of mankind, while the Hottentots have no art at all, to speak of. The details of social organization and religion, as well as the mythological abstracts which are given, display certain basic similarities between the two peoples, though it is not strange that since culture is more susceptible to change than physical form or language, differences between the two folk should be most apparent in their cultural life.

Of the moot question of the origin of these two stocks Dr. Schapera gives a clear analysis. He comes to the conclusion that

> The evidence seems to indicate that at a very early time the Bushmen occupied the hunting grounds of tropical East Africa, perhaps even to the confines of Abyssinia. That they are no longer to be found in this region may be ascribed to its extensive invasion by later Hamitic and Negro peoples. Harried by the encroachment of these more powerful races, the Bushmen, where they were not exterminated or absorbed, must gradually have passed southwards, keeping along the more open grasslands of the eastern mountainous zone . . . until, when the written history of South Africa commences, they were roaming all over the territory south of the Zambesi River (p. 28).

Of the Hottentots he feels that

> The most plausible theory of the racial origin of the Hottentots may therefore be that they have sprung out of a mixture of the old Bushman population of East Africa with an early immigration there of Hamites, who gave them their cattle and those peculiarities of language by which they are distinguished from the modern Bushmen (p. 43).

In discussions of the linguistic affiliations of Hottentot, it has been claimed that the Hottentot languages have been derived from the Hamitic tongues of Northeastern Africa. Though this hypothesis has been far from universally accepted, Dr. Schapera informs us that the Hottentot languages have generally been looked upon as essentially Hamitic tongues, modified by the incorporation of Bushman phonetic elements and words. He says, however, that

> It has recently been demonstrated, . . . that fundamentally, they have far more in common with the Bushman than with the Hamitic languages. They must accordingly be included with the former in the same language family, of which they constitute a fourth distinct group (p. 419).

It is impossible to do more here than outline the manner in which Dr. Schapera

takes up the culture of the two peoples whom he studies in this book, in spite of the fact that this consideration occupies the major portion of the volume. For each he takes up their social organization, their social habits and customs, economic and political life, religion and magic, and finally, their art and what he terms "knowledge"—that is, knowledge of medicine, of the stars, of the seasons, of numbers. Since the work is a compilation and not the report of a field investigation, the description is punctuated with statements of problems that are in need of further investigation. This is particularly the case in those aspects of culture where attitudes of the people are involved, and holds especially for those phases of the cultures destroyed by European influence, for information regarding which the author is forced to rely on the more or less casual reports of early travellers.

In a sense this work is a stock-taking of present knowledge of the Khoisan peoples, a critical assessing and summarizing of what has been published regarding them, and as such it is by far the most satisfactory general work on these peoples that exists. It is a valuable contribution to African ethnology, and after reading it, one looks forward to the future volumes of this series.

MELVILLE J. HERSKOVITS

THE AMERICAN NEGRO

The Anthropometry of the American Negro. Columbia University Contributions to Anthropology No. XI. MELVILLE J. HERSKOVITS. ($4.00 New York: Columbia University Press, 1930.)

In the diary of his second visit to the United States Sir Charles Lyell wrote, under date of February 8, 1846, a glowing forecast of what the future would hold for the Negro people of America, for he had

> the most sanguine hopes of their future improvement and emancipation, and even their ultimate amalgamation and fusion with the Whites.

It is easy at this time to see how Lyell's mind was dominated by a zoological attitude. Huxley, indeed, tried to apply the same zoological method to the study of Man in 1871. Both thought in terms of mongrel breeds. It never occurred to Huxley, and even less to Lyell, as Keith has recently pointed out, that there still remain deeply implanted in Man's nature those "instincts" which are concerned in race building.

Dr. Herskovits' new book is a study of the physical characters of a people in the light of this newer understanding. It is an endeavor to depict the present, with knowledge of the past and wisdom for the future. And for this reason it will meet with adverse criticism and disparagement from those whose prejudices and assumptions rob their minds of clear judgment. But it is a book which will, after these attacks prompted by fear and misconception have died away, become not merely a source of reliable information upon the physical status of the American Negro today, but a guide to those who would investigate the process of human evolution in its most practical aspect, namely that of international or inter-racial relationships.

It is true that Dr. Herskovits confines his attention to physical traits alone, but it is also abundantly clear that his analysis is made and his conclusions drawn with a thorough first-hand understanding of the social and economic factors which influence, directly and indirectly, the bodily conformation of a people.

While anthropologists in general have refrained from expressing inferences upon the physical build of the American Negro on the basis that we have not yet an adequate sample of true African Negroes with which to make comparison, Herskovits has recognized the impossibility of attaining that visionary ideal and has analyzed his data in contrast and comparison with the scattered information upon West African peoples set forth in literature and gathered by himself with assiduous zeal. This is boldness, not temerity. It is the application of scientific method to data, imperfect in many ways, but nevertheless as representative as any we are likely to possess in the future, since the transportation facilities of modern times render ever less probable the accumulation of records upon an African sample which, for centuries past already, can have been "pure" only in the untutored imagination of theorists.

Dr. Herskovits obviously would not claim this book as the last word on the physical anthropometry of the American Negro, but he would be justified in holding that, having set down unequivocally an evaluation of knowledge on the subject as it exists, largely through his own efforts, today, we now have a basis upon which further and even more penetrating investigations can be made. He has given us an excellent example of methodology. He has demonstrated the possibility of a new and constructive attack on the problems of anthropometry. And he has done that which every leader of thought hopes to do, namely, laid the foundation for still more elaborate and satisfying contributions to human knowledge.

T. WINGATE TODD

Negro Year Book, An Annual Encyclopedia of the Negro, 1931–1932, edited by MONROE N. WORK. ($2.00 Negro Year Book Publishing Co., Tuskegee Institute, Alabama.)

This is the eighth edition of a work that has come to be a standard reference on the Negro. It is edited, as were the earlier editions, by Monroe N. Work, and again attempts a full portrayal of the Negro's position, not only in the United States, but in the world as a whole. This edition appears in improved format and binding. It will stand rougher usage than the earlier paper-bound issues, and the clearer typography makes it easier to read.

The volume is divided into eight parts, the first of which deals with the Negro in the United States. Interracial co-operation, the manifestations of racial consciousness on the part of the Negro and discriminations against the Negro of a social and political character, are first considered. This is followed by a discussion of the "racial integrity" movement, one which has been developed by Whites who feel that White stock must be kept free from Negro blood at any cost. Here, as elsewhere, the book holds a double value for the student of culture, for a definite point

of view goes with the presentation of facts. There is no attempt made to conceal this approach to the data. Considering the position of the Negro in the United States and his disabilities, this is perfectly understandable; and since, to my knowledge, the point of view is not allowed to affect the statistical presentation of fact, it is quite justifiable.

One point of interest is the resentment of the Negro against the use of the term "Negress" to mean a Negro woman, which has reached a point where Mr. Work deems it worth some discussion. I quote the following (p. 19):

> The word Negress is obnoxious more than it is insulting to colored people. There is really no ethnological or other reason for its usage. In the brute world we speak of "lion" and "lioness," "tiger" and "tigress," etc., but assuredly colored women are not of the brute world.

Though we also speak of actor and actress, prince and princess, poet and poetess, Jew and Jewess, laundryman and laundress, that fact need not deter the ethnologist from drawing his lesson as to the manner in which a folk-idea may gain sufficient strength so that it finds a place in a work of the caliber of this one. Similarly interesting is the rather long section where the capitalization of the "N" in Negro is discussed. This insistence, perhaps, has somewhat more justification than that regarding the abolition of the word "Negress," and one reads with pleasure the long list of newspapers in both North and South, of journals—in which the *American Anthropologist* is listed as one—and of publishers, in whose style-book the word is spelled with a capital.

The remainder of the first section recounts the achievements of the Negro in agriculture, business, labor, invention, sport, scholarship, education and religious affairs. It is an interesting example of acculturation that the section headed "Scholastic and Other Distinctions" follows immediately after the one headed "Sports." There is a section on the criminality of the Negro and one on lynching; there are mortality statistics, a discussion of slavery, of what Negroes have achieved in the army, and finally a useful abstract of census figures on the Negro, in which are included results of the 1930 census.

The section on Negro slavery is little changed from what was given in earlier editions, and the change, if anything, is for the worse. This, in large part, is due to the substitution for the older data of a discussion of the doctrines of Professor Leo Wiener. The editor, who apparently accepts these theories, states that Wiener has

> set forth . . . in a critical study . . . the proposition . . . that Negroes from Africa had migrated to the American continent long before the first voyage of Columbus.

Those acquainted with Wiener's conclusions, which are not accepted by either Africanists or Americanists, will recognize the following (p. 305):

> He adduces facts to show that many of the practices, rites, ceremonies and words of the aborigines of the West Indian Archipelago came from Africa. He further points out that a number of supposedly Indian words are in reality of African origin, as for example, canoe and the appellations for the sweet potato and yam. Tobacco and its smoking, he brings evidence to show, were introduced into America by Africans, who in his opinion, long before the time of Columbus had crossed over to America from Guinea.

It is extremely unfortunate that Mr. Work should not be sufficiently acquainted with the numerous criticisms leveled against Professor Wiener's hypothesis, so as at least to indicate in the *Year Book* that the position taken is not one generally accepted by competent scholars.

Part Two considers the Negro in Latin America, and in this part the section on Haiti, with the recommendations of the commission for the study of conditions there, and those of the commission on education in Haiti, will be found useful. There is a section on the Negro in Europe, with a discussion of the growth of color prejudice, and a fourth section on the Negro in Africa, which is far below the standard set by the first part of the book. Part Five deals with the Negro in poetry and the fine arts, and the sixth part with literature on the Negro. It has for its sub-title, "A Review of Books on or Relating to the Negro, published 1925–1930." In this section again, the present edition of the *Year Book* is incomparably less valuable than were earlier editions. No attention at all is given to contributions relating to the Negro which appeared in periodical literature, in spite of the fact that a bibliography of such articles would be much more useful than a repetition of titles five and six years old, some of which have little, if anything, to do with the Negro, and which merely describe primitive peoples who are not even Negroid.

The *Year Book* is still useful, though not up to the standard set by its predecessors. It is to be hoped that in the next issue the gains in substantial binding and clear typography will be maintained, and that the editor will make an effort to bring the reading matter up to the level attained in earlier editions.

MELVILLE J. HERSKOVITS

NORTH AMERICA

Archeological Collections From the Western Eskimos. THERKEL MATHIASSEN. (Reports of the Fifth Thule Expedition. Vol. 10, No. 1, 98 pp., 22 plates, 19 figures. Copenhagen: Gyldendalske Boghandel, Nordisk Forlag, 1930.)

In the present paper Mathiassen describes the archaeological collections gathered by Knud Rasmussen on his trip through the territory of the Western Eskimo in 1924. Since these collections were for the most part secured either by Eskimo or local white traders they are accompanied by very little data beyond that of general provenience. Hence from the nature of the material the value of the present work would seem to lie in its descriptive rather than its theoretical content.

Five main collections are considered,—one of 670 artifacts from Point Atkinson (a little to the east of the Mackenzie river); one of 998 artifacts from Barter island (just west of the Mackenzie river delta); one of 537 artifacts from Point Barrow; one of 836 artifacts from Point Hope; and, lastly, one of 168 artifacts from East cape, Siberia. As in the previous papers of this series, the illustrations of the specimens are excellent. With the exception of the material from Barter island, all the collections appear to be very heterogeneous and in many cases are quite recent.

The Barter island collection, however, appears to the author as representing a definite time period considerably later than the time of the Thule Culture and prior

to the advent of Europeans. On the basis of typology Mathiassen divides the material from Point Barrow into three groups: first, those types pertaining to the Thule Culture; second, those unknown to the Thule Culture but in present day use among the Central Eskimo; and third, those types known solely from the territory of the Western Eskimo. The author argues with reason that the second group types are in the main later than the Thule Culture types in the central regions. However, when he also concludes on the basis of restricted distribution and observed modern use that all the types of the third or western group are likewise younger than those of the Thule Culture the reviewer fails to follow either his logic or his interpretation of the known facts.

Space is lacking for a detailed discussion of this important question but a few words regarding the Birnirk type of harpoon, one of the features of the third and assumed late group, may serve to point the issue. In the Point Barrow collection under discussion these so-called Birnirk harpoons are common, while only one Thule (Type 2) harpoon occurs. Likewise in the oldest sites as yet reported from the Point Barrow region, i.e., the Birnirk and Van Valin excavations, the Birnirk type again predominates. In the Bering sea region Jenness found strong evidence that the Birnirk preceded the Thule type of harpoon (*Ann. Rep. Nat. Mus. of Canada*, 1928, p. 77), while Collins definitely demonstrated this to be the case by direct stratigraphic evidence (*Smith. Misc. Coll.* 81 No. 14: 46, 1928). Last of all Mathiassen himself has previously (*Arch. Cent. Esk.* II, p. 26) suggested the derivation of the Thule type harpoon (with vestigial sockets for side blades) from a thin, open-shafted harpoon type with actual side blades such as occur in Alaska, a description easily applicable to the Birnirk type of harpoon. Yet here we find him arguing on typological and distributional grounds that while the Birnirk harpoon may be older in the Bering straits region it is later than the Thule type in the Point Barrow area (p. 78). Thus he not only hypothecates an earlier and as yet unknown Thule horizon at Point Barrow but does the same for Bering straits to explain the observed relatively late occurrence of Thule types in this area. He even goes further and explains the late occurrence of the latter in the Bering sea region as possibly due to "the advance of a new Thule people from Asia."

This tendency to interpret all western data in terms of the Thule Culture rather than on its own merits occurs elsewhere, and, to the reviewer, mars what would otherwise be an excellent descriptive paper. The time for basing important hypotheses on undocumented collections is fortunately past and it is largely due to the previous work of the present author that this is the case. Careful excavations in the west, like those of Mathiassen in the central regions, will eventually work out the sequence of Eskimo cultures in Alaska. Fortunately such western excavations have been in progress for the last five years and many results are already available. Meanwhile such papers as the one under review have value, but the results of further scientific excavations by men as gifted as the author would be even more appreciated.

WM. DUNCAN STRONG

Among the Eskimos of Wales, Alaska 1890–93. HARRISON ROBERTSON THORNTON. (XXXVIII, 235 pp., 52 illustrations. Cloth $4.00. Baltimore: The Johns Hopkins Press; London: Humphrey Milford, Oxford University Press, 1931.)

This book describes the life and environment at Cape Prince of Wales, Alaska, prior to such sweeping changes as the gold rush or the introduction of reindeer. It is based on an unpublished manuscript by H. R. Thornton entitled "A Year Among the Cape Prince of Wales Eskimos" which was completed prior to August 15, 1891, edited and annotated in the present volume by Neda S. and William M. Thornton, Jr. It contains an intimate account of the experiences of the author among the Eskimo of Cape Prince of Wales with various natural history observations and an added account of his life as a missionary teacher and of his tragic death. The picture of Eskimo life at this time is quite vivid and should have definite value to present day workers of a scientific or practical sort in this region. The ethnologist while appreciating many first hand observations will often be disappointed by the extremely general nature of much of the ethnographic description. The lack of any index is a handicap and, while certain footnotes have value, many others which explain to the reader that the "fall of man" is from Genesis, Chapter III, that "Lilliput" is from "Gulliver's Travels," etc., though entertaining, seem alien to the text. The illustrations, gathered from many sources, are attractive but present little that is new.

WM. DUNCAN STRONG

American: the Life Story of a Great Indian. FRANK B. LINDERMAN. (313 pp. New York: John Day Co., 1930.)

The author, who is described as a one-time trapper, hunter, and cowboy, here records the reminiscences of Plenty-coups (died March 4, 1932), long the official chief of the Crow Indians and actually one of the braves entitled to the designation of "chief" by virtue of his war exploits. There are some absurdities in the book, such as the supposed rule that a man who had not counted coup was not allowed to marry until twenty-five years of age (p. 117 *et passim*); and naturally it is primarily the military aspect of culture that receives attention. Also, the spelling of native words is needlessly inaccurate and clumsy (e.g., Ah-badt-dadt-deah for akbá·tətdiə, The one who made everything, God).

However, a great deal of anthropological value is sprinkled through the book. Mr. Linderman has grasped the matrilineal character of the social organization, correctly translates several clan names, and brings out the exogamous rule (pp. 7, 52, 118). The sororate is illustrated (p. 82), and the mother-in-law taboo properly emphasized (pp. 105 f., 180). According to Plenty-coups, a brother-in-law (wife's brother) had a pre-emptive right to hold the horse of a fellow-raider dispatched into the enemy's camp (p. 184)—an interesting detail. The author is less fortunate in his references to the military societies. Though he correctly describes their police functions, including the duty of restraining over-eager youths from going on a raid at the wrong time, he errs in associating these wholly secular organizations with secrecy and ordeals (pp. 52 f., 107 f., 189 f.). He is also quite mistaken in denying that the

plant formerly raised by the Crow in the spring was tobacco (p. 98). Both from photographs of gardens and an actual specimen (deposited in the American Museum of Natural History) Professor Setchell identified the weed as *Nicotiana*, though it is true that the ceremonial species is different from that *smoked* by the Crow.

Plenty-coups, like my informant Gray-bull (*The Material Culture of the Crow Indians*, AMNH-AP 21: 260, 1922) chased butterflies as a boy; and rubbing their wings over his heart was supposed to make him swift (p. 10 f.). He also gives an account of the boys' pastime of stealing meat (p. 20 sq.). His illustration of the arrow-release is thus described:

> Gripping it firmly with his left hand, he deftly placed the arrow with his right, the index and second fingers straddling the shaft and, with the third finger, pulling the bow-string. The thumb's end was against the arrow notched into the string (p. 14).

Visions loom prominently. Plenty-coups himself was blessed by the benevolent Dwarfs, who play a part in Crow mythology; also, by the chickadee (pp. 40 sq., 66). It is rather remarkable that these revelations, the second connected with a finger-joint sacrifice (p. 59), were secured before he was ten years old. His dwarfish tutelaries counseled him years later in a dream (p. 245), and the chickadee was prayed to in distress (p. 143). There is reference to the dragging of skulls in order to induce a vision (p. 117), and the revelation of a wound-doctor is given in detail (p. 299 sq.). In fact, some of the very best material in the book relates to the curing of wounds (pp. 214, 305 sq.); the story of how Bird-shirt, imitating a wolf with her whelps, treated Swan's-head is especially vivid (261 sq.). Mountain-wind's divining the outcome of a battle by means of his shield is also graphically described (p. 280 sq.). References to mythology are rare, but an interesting detail is given, viz., that Old-Man-Coyote made the pintail grouse, using the muscles of a bull for its body and a wolf's claw for its beak (p. 226). This conforms closely to an as yet unpublished version of the creation story I recorded in 1931.

The bulk of the narrative, of course, relates to war. The association of scouts with wolves is constantly emphasized (p. 85 et passim); there is a good account of the hazing to which novices were subjected on the warpath (p. 119 sq.), and, of course, the honorific deeds, such as cutting of a picketed horse (pp. 19, 88, etc.), are constantly mentioned. There are references to the secret confessions of the war party's members (p. 105) and to the counting of a coup against a lodge (p. 291). A statement (p. 283) seems to confirm information I recently secured that in any one encounter only one first-coup could be counted.

The English wording is not always designed to bring out the spirit of the original, but here and there one encounters snatches which ring true: " . . . nothing here can last forever . . . let us act as though we were the Seven-stars in the sky that live forever" (p. 144). "Have no fears for yourselves. . . . Remember that nothing is everlasting except the Above and the Below" (p. 281 f.).

Since there is no good popular account of the Crow except Curtis's, which is inaccessible to most readers, Linderman's book serves a definite purpose and even supplies some worth-while facts for the ethnographer.

ROBERT H. LOWIE

The Narrative of a Southern Cheyenne Woman. TRUMAN MICHELSON. (Smithsonian Miscellaneous Collections, vol. 87, no. 5. 13 pp. Washington, 1932.)

Dr. Michelson was probably the first ethnographer to secure the autobiography of an Indian woman (*The Autobiography of a Fox Indian Woman, 40 Ann. Rept., BAE:* 295–349, 1925) and his latest publication provides another valuable document on aboriginal feminine psychology. While the earlier narrative was phonetically transcribed and translated from a record in the current Fox syllabary, the Cheyenne reminiscences were written out in English by the heroine's son and appear in only slightly corrected form.

In both cases Dr. Michelson has added ethnographic notes of considerable importance. While among the Fox the marked prominence of the maternal uncle was noted, the Cheyenne witness was obviously influenced by her paternal aunt. Dr. Michelson seems in doubt whether the usage was individual or institutional. I rather favor the latter assumption, and since such specific relations between a father's sister and her brother's offspring are fairly frequent in North America and elsewhere, I suggest a special term, "amitate" (Latin *amita*), to counter-balance the familiar "avunculate." Among the interesting details may be mentioned the occurrence of the virginal safety girdle (p. 4), the appraisal of marriage by purchase as the highest form (p. 5 f.), the reference to a women's guild for tipi decoration (p. 9), and the co-operation of husband and wife in sacred ritual (p. 9 et sq.). Possibly of greatest theoretical importance is the footnote (p. 8) in which Dr. Michelson, while registering matrilocal residence, definitely allies himself with Mooney in rejecting Grinnell's view that the Cheyenne were once organized into matrilineal exogamous clans.

It may not be superfluous to suggest once more that autobiographies, like folktales, are capable of spontaneously illuminating those elusive attitudes and sentiments of which it would be hopeless to elicit an expression by direct questioning; and the present paper derives much of its significance precisely from this fact.

ROBERT H. LOWIE

SOUTH AMERICA

Die Feuerland-Indianer. 1. Band: *Die Selk'nam.* MARTIN GUSINDE. (1154 pp., 90 figs. 50 plates, 4 maps. Mödling bei Wien, 1931.)

The present volume is the first of a series of three dealing with the tribes of Tierra del Fuego: the Ona, Yahgan, and Alakaluf.[1]

Only by many years spent among the people in question could Gusinde have obtained his material for this impressive monograph, which must be rated as the most exhaustive study yet made of any tribe in the New World. In spite of the impressive work done in the past twenty years in clearing up matters of religious and social organization among the natives of North America, until the publications of Tessmann and Gusinde most of South America remained in these matters a veritable

[1] While Gusinde has altered the tribal names in conformity with native usage, the reviewer is keeping to the original nomenclature, thus Ona instead of Selk'nam.

Dark Continent. The author deserves the more credit for his splendid achievement, considering the most inhospitable climate in which he had to work, and the risk he ran in his investigation of the men's ceremony.

In 1922 Dr. Koppers joined Gusinde in a several months' expedition to the Yahgan, and upon his return to Europe published his popular book *Unter Feuerland Indianern*. Professor Lowie reviewed this book in the present journal (26: 3, 414) and for the first time drew attention to certain important cultural problems developed by the Tierra del Fuegan discoveries. He found astonishing resemblances between Tierra del Fuego and California because of the presence in the former region of initiations with scratching-sticks and drinking-tubes, of shamanistic schools, and the two brother culture hero story. Since this date (1924) Gusinde has continued his research and scientific writings in various journals, while scientific investigation in California likewise progressed, so that I was able this year to draw up a more complete comparison (AA 33:4) of the two culture areas. In this study I summed up the outstanding points of Ona religion as they appear in the volume here reviewed. Naturally, Gusinde in working up his permanent treatment entered into the fullest detail and supplied copious documentation of his original journal material.

A few points deserve mention. In my recent article, quoting both Schmidt and Gusinde, I stated that the Ona High God Tĕmaukpl raised the heavens, like Maui of Polynesia or Quetzalcoatl of the Aztecs, in order to make room for the first race of men. Now Gusinde writes (p. 579) that it was the culture hero Kenos who performed the feat. Has Gusinde in his possession two different versions of the story?

One feature of Ona culture described by Gusinde will doubtless arouse a certain amount of doubt in scientific circles, for the like has never been claimed before for any primitive or even civilized group. Gusinde denies absolutely the presence of illegitimate children among the Ona, further claiming that only couples already promised in marriage engaged in sexual intercourse, and that adultery was unknown (p. 326).

The absence of any true form of government of real chiefs is to be expected among a very primitive people like the Ona, and yet here as elsewhere we find political systems in the forming. In every large family group there was an elderly man, the kemal, who without expressed or inherited authority had the leadership of his people.

Gusinde has perhaps wisely chosen to make this book one of pure description, with theory and interpretation reserved for a later period. In his definition of religion, however, he states:

> Wenn ich in diesem Werke von "Religion" spreche, so meine ich ausschliesslich die Anerkennung and Verehrung des Temaukel.

Finally I wish to express the hope that later editions of Gusinde's works will appear at prices below $30 a volume. Aside from the material presented, the author is master of the art of scientific narrative and exposition, and it would appear to me a pity to deprive private libraries of the privilege of owning such well worthwhile books.

E. M. Loeb

MISCELLANEOUS

Ethnologische Studien. Zeitschrift für das gesamte Gebiet der Völkerkunde. Band 1, Heft 4. Herausgegeben von DR. FRITZ KRAUSE. (Halle, 1931.)

The past year has witnessed a new and most important addition to periodic anthropological literature in the appearance of *Ethnologische Studien*. The present volume exceeds in interest even the high-water mark set by the preceding numbers, containing the following titles: Die Ethnologie der Gegenwart by Leo J. Sternberg; Zur neuen Völkerkunde aus goethischer Denkart und Wirklichkeitserlebnis by R. Karutz; Io, die höchste Gottheit der Maori by F. R. Lehmann; Vorislamisches in einigen vorderasiatischen Sekten und Derwischorden by E. Krohn; and Maske und Ahnenfigur by F. Krause.

The article by Sternberg is a German translation of an address given in Moscow in 1926, and covers the field of anthropological theory from Tylor, Bastian, and Morgan to the present day schools. The author noted the importance of Lowie's disease concept diffusion theory, as presenting a radical departure from the orthodox American dynamic cultural studies, where intensive rather than extensive investigations have been the rule. While Sternberg's first reactions were those of disapproval, it is to be hoped that he will give the matter further consideration now that a fuller treatment on the subject has been published.[1] Elsewhere in his paper Sternberg has given every school of thought its full credit in the furtherance of anthropological knowledge, and concludes that: (1) the possibility of independent invention has remained unshaken; (2) the problem of diffusion and the problem of parallelism are quite independent of one another; and (3) evolution in ethnography also cannot be denied, although this process depends on borrowing.

Karutz presents in the next article a discussion of "Das Zweigeschlechterwesen," a recent book by C. L. Herschfeld.

Lehmann has written a concise summary of what we know concerning Io, the Maori (New Zealand) High God. This divinity was believed to reside at the top of the Maori twelfth heaven, and was himself uncreated, the source of all things, eternal, omniscient, and invisible. He was prayed to by his priests, but received no sacrifices. He called the world into existence by the power of the word. The belief in Io, in a less developed form than that of the Maori, was held by the Polynesians of the eastern islands, but was lacking in the older strata of Samoa, Tonga, and Niue, where Tangaloa was creator. Lehmann believes that the cult was brought to New Zealand with the chief migration about 1350 A.D. and very likely had its source in India or Indonesia. However, since even in Nias, where the religion resembles that of Polynesia to a surprising extent, or in India proper with its Brahma cult, the purity of the Io belief is unsurpassed, I would attribute a great part of this religious development to the local Maori college of priesthood, the whare wananga.

Krohn has demonstrated that the dervish of Mohammedan Asia is in the main a replica of the northern Asiatic shaman. He practices three arts unknown to Islam:

---

[1] F. E. Clements. Primitive Concepts of Disease. UC-PAAE 32: 2, 185–252 (1932).

music, dance, and the playing of tricks. He cures sickness, foretells the future, and when dancing foams at the mouth and falls unconscious.

Finally Krause has discussed masks and ancestral idols from a pre-animistic basis. The author believes that tranformations from human to animal or vice versa when of a possessional form are animistic, otherwise they are pre-animistic. Such a distinction occurs in California in regard to bear doctors. Among the Wailaki a man can become a bear either by being possessed by a bear spirit or by wearing a bear skin. While I would personally agree in this case that the possessional form of transformation is the later of the two, I am not as yet prepared to agree that a pre-animistic stage of culture is known to have existed for mankind.

E. M. Loeb

Yellow Fever. An epidemological and historical study of its place of origin. Henry Rose Carter, M.D. Edited by Laura Armistead Carter and Wade Hampton Frost. (308 pp. Baltimore: Williams & Wilkins Co., 1931.)

This is a very attractive and instructive book, one which should be known by all anthropologists interested in the American continent. Its keynote is a proof that yellow fever is not an aboriginal American disease, but was imported by ships and ships' crews to this continent from Africa. This contention is of importance, as some archaeologists have presented the theory that yellow fever and malaria were the causes of the destruction of some of the highest aboriginal cultures of our continent.

It is in particular Part III that concerns the archaeologist of Mexico and of the Maya, but this is only a fragment, and cannot be fully appreciated unless one reads the preceding parts—Section I on "The Epidemology of Yellow Fever"; and II, entitled "Diseases Which Have, or Might Have Been Confused with Yellow Fever in the Past."

The book shows great erudition and familiarity with the original sources, often refreshed by humorous remarks, gracefully presented. The author seems to be unfamiliar with the studies of the famous archaeologist and ethnologist, Eduard Seler, and it is unfortunate that he had access only to the Brinton translations of Maya sources.

To anthropologists, the book has so medical a title that they probably would overlook it as an important contribution to their field. It is for this reason that I herewith call attention to it.

In the matter of Maya-Gregorian calendar correlation the Carter book presents an interesting point when it shows that Narvaez brought small-pox to Cozumel island in 1520. The Morley correlation places the year called Katun 2 Ahau in Maya count at 1517. Juan Martinez—using statements of Bishop Landa, the great historian of Yucatan,—places it in 1520, thus coinciding with the Narvaez visit.

Step by step we are shown the sundry expeditions of the Conquerors with records of plagues until 1648, when Cogolludo describes a yellow fever epidemic in Yucatan.

It strikes one that such a contribution as this should have been published im-

mediately after it was written. If this had been done, then it would have been invaluable as a subject of discussion for Ralph L. Roys while he was writing his *Ethno-Botany of the Maya*, as well as to all those who are concerned with the field but are not primarily specializing in the medical and medico-historical line.

Yellow Fever stands as a most valuable and important contribution to the medico, but even more so to the anthropologist.

FRANS BLOM

Fiji and the Fijians 1835–1856. G. C. HENDERSON. (333 pp., 39 maps and ills., index. 25 s. Sidney: Angus and Robertson Ltd., 1931.)

This volume was written with the object of elucidating the Journal of the Rev. Thomas Williams, Wesleyan Methodist missionary in Fiji from 1840 to 1853. As such it deals chiefly with the work of missionaries in the Fijian archipelago, and contains much historical material which would be highly useful to an ethnographer working among the Fijians.

There is little of direct ethnographic interest in the book, however, save chapter 6, which deals with the Fijian character. Herein is painted a word picture which is apparently a fair appraisal of all aspects of the native's many-sided nature.

E. W. GIFFORD

SOME NEW PUBLICATIONS

Baker, Jessie E. Piankishaw tales. Journ. of American Folk-Lore 44, no. 172: 182–190. April–June, 1932.

Barrett, S. A., and Alanson Skinner. Certain mounds and village sites of Shawano and Oconto counties, Wisconsin. Bull. Pub. Mus. City of Milwaukee 10, no. 5: 401–552, pls. 74–97, figs. 30–59. Milwaukee, Wis., Mar. 4, 1932.

Beazley, J. D., V. Müller, and E. H. Dohan. Recent additions to the classical collections. Mus. Journ. 23, no. 1. 80 pp., 60 ills. University Museum, Philadelphia, 1932.

Boas, Franz. Anthropology and modern life, new and revised ed. 255 pp., references. W. W. Norton & Co., New York, 1932. $3.00.

Briffault, Robert. Breakdown, the collapse of traditional civilization. Brentano's, New York, 1932. $2.50.

Bull, Norris L. Monolithic axe found in Connecticut. Conn. Arch. Appraisal, introductory ser. 1. 22 pp., 3 figs. Hartford, 1931.

Bushnell, David I., Jr. Seth Eastman: the master painter of the North American Indian. Smithsonian Misc. Cols. 87, no. 3. 18 pp., 15 pls. Smithsonian Inst., Washington, April 11, 1932.

Cahen, Alfred. Statistical analysis of American divorce. 149 pp., 11 tables, 18 charts, bibl., index. Columbia University Press, New York City, 1932. $2.25.

Claflin, William H., Jr. The Stalling's island mound Columbia county, Georgia. Papers of the Peabody Mus. of Am. Arch. and Ethn., Harvard Univ. 14, no. 1: 1–47, 72 pls., 1 fig. Cambridge, 1931.

Clements, E. Forrest. Primitive concepts of disease. UC-PAE 32, no. 2: 185–252, 4 maps. Berkeley, 1932. $.75.

Collins, Henry B., Jr. Excavations at a prehistoric Indian village site in Mississippi. Proc. U. S. Nat'l Mus. 79, art. 32, pp. 1–22, pls. 1–13. Smithsonian Inst., Washington, 1932.

Coon, Charleton S. Tribes of the Rif. Peabody Mus. of Arch. and Ethn., Harvard African ser. 9. Quarto, 417 pp., 68 pls., 136 tables, 43 maps. Cambridge, 1932. $12.50.

Dangel, Richard. Das Chinhchaysuyu der Departamentos Huanuco-Ancash. Journ. de la Société des Américanistes 23, fasc. 1: 71–113. Paris, 1931.

Davis, Emily. Ancient Americans; the archaeological story of two continents. 311 pp., 34 ills. Henry Holt and Co., New York, 1931. $3.50.

de Angulo, Jaime. Two Achumawi tales. Journ. of American Folk-Lore 44, no. 172 (April–June, 1931): 125–136. Am. Folk-Lore Soc., G. E. Stechert and Co., Agts., New York, 1932.

de Angulo, Jaime, and Béclard d'Harcourt. La musique des Indiens de la Californie du Nord. Journ. de la Société des Américanistes 23, fasc. 1: 189–217. Paris, 1931.

de Angulo, Jaime, and L. S. Freeland. The Lutuami language (Klamath-Modoc). Journ. de la Société des Américanistes 23, fasc. 1: 1–45. Paris, 1931.

de Loë, Baron. La Belgique ancienne. In 3 vols. Vol. II: Les ages du métal. 8°, 270 pp., 129 figs. and pls. Musées Royaux d'Art et d'Histoire à Bruxelles, 1932. 75 fr.

de Lahontan, Baron. Dialogues curieux entre l'auteur et un sauvage de bon sens qui a voyagé et mémoires de l'Amérique septentrionale. Introduction par Gilbert Chinard. 268 pp., 7 gravure reproductions. Johns Hopkins Press, Baltimore, 1932. $4.00.

Department of Middle American Research of the Tulane University of Louisiana. Its activities and aims. 39 pp., ills. New Orleans, Jan., 1932.

Denver Art Museum Department of Indian Art. The Blackfoot Indians. Leaflets nos. 37, 38: 1–8. Denver, Dec., 1931.

Denver Art Museum Department of Indian Art. New England Indian houses, forts and villages, colonial period. Leaflet no. 39, 3 pp. Denver, Jan., 1932.

Denver Art Museum Department of Indian Art. The Wichita Indians and allied tribes Waco, Towakoni, and Kichai. Leaflet no. 40, 3 pp. Denver, Jan., 1932.

Doering, Henrich U. Ein Analogon des Zackenstab-Dämons der Nasca-Malerei in Neusseland. Journ. de la Société des Américanistes 23, fasc. 1: 115–120. Paris, 1931.

Elliott, W. C. Lake Lillooet tales. Journ. of American Folk-Lore 44, no. 172 (April-June, 1931): 166–181. Am. Folk Lore Soc., G. E. Stechert and Co., Agts., New York, 1932.

Engelbrecht, Th. S. Das Pferd und die Indogermanen. Niederdeutschen Monatsheften 7, 1931.

Frobenius, Leo. Morphology of the African bow weapon. Trans. from the German by Blanche Lommel, with 26 charts by Ritter von Wilm and 288 text illustrations by E. Mannsfeld with the assistance of A. Schulz. Walter de Gruyter & Co., Berlin and Leipzig, 1932.

Gifford, E. W. The Northfork Mono. UC-PAAE 31, no. 2: 15–65, pls. 1–16, 3 text figs., map. Berkeley, 1932. $1.25.

Gifford, E. W. The Southeastern Yavapai. UC-PAAE 29, no. 3: 177–252, 6 pls., 1 fig., 1 map. Berkeley, 1932. $1.00.

Gilmore, Melvin R. The Arikara book of genesis. Papers Mich. Acad. Sci., Arts and Letters 12: 95–120, 1929, published 1930.

Gilmore, Melvin R. The Arikara tribal temple. Papers Mich. Acad. Sci., Arts and Letters 14: 47–70. 1930, published 1931.

Gilmore, Melvin R. Dispersal by Indians a factor in the extension of discontinuous distribution of certain species of native plants. Papers Mich. Acad. Sci., Arts and Letters 13: 89–94. 1930, published 1931.

Gilmore, Melvin R. Notes on gynecology and obstetrics of the Arikara tribe of Indians. Papers Mich. Acad. Sci., Arts and Letters 14: 71–81, 1 pl. 1930, published 1931.

Gilmore, Melvin R. Vegetal remains of the Ozark Bluff-Dweller culture. Papers Mich. Acad. Sci., Arts and Letters 14: 83–102, 2 pls. 1930, published 1931.

Granqvist, Hilma. Marriage conditions in a Palestinian village. Commentationes Humanarum Litterarum 3, no. 8: 1–200, tables, references. Societas Scientiarum Fennica, Helsingfors, 1931. 75 mk.

Handy, E. S. Craighill. Houses, boats, and fishing in the Society islands. Bernice P. Bishop Mus. Bull. 90. 111 pp., 25 pls., 21 figs. Honolulu, 1932.

Haury, Emil W. Roosevelt: 9: 6, a Hohokam site of the colonial period. Privately printed for the Medallion, Gila Pueblo Globe, Arizona, Jan., 1932.

Henderson, G. C. Fiji and the Fijians 1835–1856. 333 pp., 39 maps and ills. Angus and Robertson, Ltd., Sydney, Australia, 1931. 25 s.

Herfort, K. Pedigrees of feeble-minded, part 4: Epilepsy-Spasmophily. Anthropologie 8, no. 4: 247–290. Prague, 1930.

Holmes, S. J. The changing effects of race competition. Science 75, no. 1938: 201–208. Science Press, New York, Feb. 10, 1932.

Hough, Walter. The buffalo motive in Middle Celebes decorative design. Proc. U. S. Nat'l Mus. 79, art. 29: 1–8, pls. 1–9. Smithsonian Inst., Washington, 1932.

Izikowitz, Karl Gustav. Le tambour à membrane au Pérou. Journ. de la Société des Américanistes 23, fasc. 1: 163–175. Paris, 1931.

Karutz, Richard. Zur neuen Völkerkunde aus Goethischer Denkart und Wirklichkeitserlebnis, Ethnologische Studien 1, Heft 4: 259–270. Halle, 1931.

Kidder, Alfred Vincent. The artifacts of Pecos. 314 pp., 251 ills. Yale University Press for Phillips Academy, New Haven, 1932.

Kirchhoff, Paul. Die Verwandtschaftsorganisation der Urwaldstämme Südamerikas. Zeitschrift für Ethnologie 63: 85–193.

Klauber, L. M. A herpetological review of the Hopi snake dance. Zoological Society of San Diego Bull. 9. 92 pp., 5 pls. San Diego, Jan. 25, 1932.

Krause, Fritz. Maske und Ahnenfigur: Das Motiv der Hülle und das Prinzip der Form. Ein Beitrag zur nichtanimistischen Weltanschauung. Ethnologische Studien 1, Heft 4: 344–364. Halle, 1931.

Krieger, Herbert W. Aboriginal Indian pottery of the Dominican Republic. U. S. Nat'l Mus. Bul. 156. 165 pp., 56 pls., index. Smithsonian Inst., Washington, 1931. $.75.

Kroeber, A. L. The Patwin and their neighbors. UC-PAAE 29, no. 4: 253–423, 6 text figs., 1 map. Berkeley, 1932. $1.60.

Krohn, Else. Vorislamisches in einigen Vorderasiatischen Sekten und Derwischorden. Ethnologische Studien 1, Heft 4: 293–343, 3 pls. Halle, 1931.

La Farge, Oliver, II, and Douglas S. Byers. The Year Bearer's People. Tulane Univ. Middle Am. Research ser. pub. 3. Ills., 2 color pls. New Orleans, 1931. $5.

Lanctot, Gustave, Contes populaires Canadiens, sixieme serie. Journ. of American Folk-Lore 44, no. 173 (July–Sept. 1931): 225–316. Am. Folk-Lore Soc., G. E. Stechert & Co., Agts., New York, 1932.

Lattimore, Owen. Manchuria, cradle of conflict. Macmillan Co., New York, 1932. $3.

Laudin, M. A. Contribution to the family-study of the tribe Ama-Xosa (Abe-Nguni). Summary. Anthropologie 9, no. 1: 90. Anthropological Inst., Charles Univ. of Prague, 1931.

Laufer, Berthold. Inspirational dreams of eastern Asia. Journ. of American Folk-Lore 44, no. 172 (April-June, 1931): 208–216. Am. Folk-Lore Soc., G. E. Stechert and Co., Agts., New York, 1932.

Lehmann, Fr. Rudolf. *Io*, die höchste Gottheit der Maori. Ethnologische Studien 1, Heft 4: 271–292. Halle, 1931.

Leyburn, James G. The Handbook of ethnography. Yale University Press, New Haven, 1932. $5.00.

Loeb, E. M. The Western Kuksu Cult. UC-PAAE no. 1: 1–137. Berkeley, 1932.

Loukotka, Čestmir. Les Indiens Kukura du rio Verde, Matto Grosso, Brésil. Journ. de la Société des Américanistes 23, fasc. 1: 121–125. Paris, 1931.

MacLeod, William Christie. Child sacrifice in North America, with a note on suttee. Journ. de la Société des Américanistes 23, fasc. 1: 127–137. Paris, 1931.

Malan, Jacques. The possible origin of religion as a conditioned reflex. American Mercury: 314–317. New York, March, 1932.

Maly, J. Le rapport entre le neurocranium et le splanchocranium. Anthropologie 8, no. 4: 295–325. Anthropological Inst., Charles Univ. of Prague, 1930.

Marett, R. R. Faith, hope and charity in primitive religion. 238 pp., index. Macmillan Co., New York, 1932. $3.00.

Marett, R. R., and T. K. Penniman, editors. Spencer's scientific correspondence with Sir J. G. Frazer and others. 174 pp., index. Oxford at the Clarendon Press, 1932. $3.00.

Matiegka, J. Les enfants slovaques de Bańská Bystrica (Résumé). Anthropologie 9, no. 1: 21–29. Anthropological Inst., Charles Univ. of Prague, 1931.

Mera, H. P. Wares ancestral to Tewa polychrome. Laboratory of Anthropology Tech. Ser. Bul. 4. 12 pp., 3 pl. Santa Fe, Jan., 1932.

Michelson, Truman. The narrative of a Southern Cheyenne woman. Smithsonian Misc. Cols. 87, no. 5. 13 pp. Washington, March 21, 1932.

Michelson, Truman. Three Ottawa tales. Journ. of American Folk-Lore 44, no. 172 (April–June, 1932): 191–195. Am. Folk-Lore Soc., G. E. Stechert and Co., Agts., New York, 1932.

O'Neale, Lila M. Yurok-Karok basket weavers. UC-PAAE 32, no. 1: 1–184, pls. 1–58, 36 text figs. Berkeley, 1932. $4.50.

Parsons, Elsie Clews. Laguna tales. Journ. of American Folk-Lore 44, no. 172 (April–June, 1931): 137–142. Am. Folk-Lore Soc., G. E. Stechert, Agts., New York, 1932.

Porteus, S. D. The psychology of a primitive people. 438 pp., index, 48 ills. Longmans, Green & Co., New York, 1931.

Public Museum of the City of Milwaukee. 1930 Year Book 10: 1–322, figs. 1–283. Milwaukee, February 19, 1932.

Radin, Paul. The Thunberbird war club, a Winnebago tale. Journ. of American Folk-Lore 44, no. 172 (April–June, 1932): 143–165. Am. Folk-Lore Soc., G. E. Stechert and Co., Agts., New York, 1932.

Ricard, Robert. L' "incorporation" de l'Indien par l'école au Mexique. Journ. de la Société des Américanistes 23, fasc. 1: 47–70. Paris, 1931.

Rice, F. J. D. Short Aparai vocabulary. Journ. de la Société des Américanistes 23, fasc. 1: 115–120. Paris, 1931.

Rozhledy, J. M. Chapitres de philosophie. Somato-anthropologique. IV. Le développement psychique. (Résumé.) Anthropologie 8, no. 4: 326–327. Prague, 1930.

Sankar, K. G. Some problems of Indian chronology. Annals of the Bhandarkar Oriental Research Institute 12, pt. 4: 301–361. Poona, 1931.

Schmerler, Henrietta. Trickster marries his daughter. Journ. of American Folk-Lore 44, no. 172 (April–June, 1932): 196–207. Am. Folk-Lore Soc., G. E. Stechert and Co., Agts., New York, 1932.

Schmidt, P. W., and P. W. Koppers. Randbemerkungen zu Prof. Dr. S. Passarge's "Offenem Brief an Herrn Prof. Dr. P. W. Schmidt." 29 pp. Published by Anthropos, Wien, 1931.

Schmidt, Wilhelm. Der Ursprung der Gottesidee. Vol. III: Die Religionen der Urvölker: Asien und Australien. Large 8°, XLVIII, 1155 pp. Verlag Aschendorff, Münster, 1932. 32 and 35 Rm.

Seligman, Brenda Z. The incest barrier: its rôle in social organization. British Journ. of Psychology (General Section) 22, pt. 3: 250–276. University Press, Cambridge, Jan., 1932.

Shryock, John K. The origin and development of the state cult of Confucius. Royal 8vo., 320 pp., tablets, tables, bibls., index., ltd. ed. Century Co. for Am. Hist. Assn., New York, 1932. $4.00.

Smith, H. R. W. The origin of Chalcidian ware. Univ. of Calif. Pubs. in Classical Archaeology 1, no. 3: 85–145, pls. 9–24, 10 text figs. Berkeley, 1932. $1.50.

Spier, Leslie. Plains Indian parfleche designs. Univ. of Washington Pubs. in Anthro. 4, no. 3: 293–322. 167 ills. Seattle, 1931. $.35.

Sternberg, Leo J. Die Ethnologie der Gegenwart. Neueste Fortschritte, wissenschaftliche Strömungen und Methoden. Ethnologische Studien 1, Heft 4: 215–258. Halle, 1931.

Suk, V. Cabbage and Goitre in Carpathian Ruthenia. Anthropologie 9, no. 1: 1–21. Anthropological Inst., Charles Univ. of Prague, 1931.

Thomas, Alfred Barnaby. Forgotten frontiers, a study of the Spanish Indian policy of Don Juan Bautista de Anza, Covernor of New Mexico 1777–1787. Octavo, 420 pp., maps. Univ. of Oklahoma Press, Norman, 1932. $5.00.

Thomas, Bertram. Arabia Felix. Scribner's, New York, 1932. $5.

Thompson, J. Eric. Archaeological investigations in the southern Cayo district British Hon-

duras. Field Mus. Pub. 301, Anthro. ser. 17, no. 3: 219–362, pls. 25–52, 21 text figs., map, bibl., index. Field Museum, Chicago, 1931.

Thurnwald, Richard. Die menschliche Gesellschaft. 360 pp., 12 pls., 1 text fig., index. Walter de Gruyter and Co., Berlin and Leipsig, 1932.

Valšík, J. A. Exogamy and endogamy in the crossing of human beings and of animals. (Summary.) Anthropologie 9, no. 1: 30–36. Anthropological Inst., Charles Univ. of Prague, 1931.

Vellard, J. Pétroglyphes de la région de l'Araguaya. Journ. de la Société des Américanistes 23, fasc. 1: 139–149. Paris, 1931.

Vignati, Milciades Alejo. Morteros o represas? pp. 45–61; Hallazco de ganchos de propulsor en un cementerio indigena de la Cuenca del rio Lujan, pp. 101–105. Notas Preliminares del Museo de La Plata tomo 1. Buenos Aires, June 10, 1931.

von Wiese, Leopold, and Howard Becker. Systematic sociology on the basis of *Beziehungslehre* and *Gebildelehre*. Wiley Social Science ser., ed. by Henry Pratt Fairchild. 772 pp., 2 tables. John Wiley & Sons, Inc., New York; Chapman & Hall, Ltd., London; 1932. $6.00.

Wavrin, Marquis de. L'ascension de Huayna-Pichu. Journ. de la Société des Américanistes 23, fasc. 1: 151–162. Paris, 1931.

West, George A. Exceptional prehistoric copper implements. Bul. Pub. Mus. City of Milwaukee 10, no. 4: 375–400, pls. 71–73. Milwaukee, Wis., Mar 4,. 1932.

Zuckerman, S. The social life of monkeys and apes. 356 pp., 24 pls. Harcourt, Brace and Co., New York, 1932. $3.75.

British Association for the Advancement of Science. Report of the centenary meeting. London, Sept. 23–30, 1931. The following papers in anthropology were presented:

Armstrong, A. Leslie. A late Upper Aurignacian Station in North Lincolnshire.

Bateson, Gregory. A form of shamanism on the Sepik river, New Guinea.

Blackman, W. Egyptian tattoo designs, their magical and decorative significance.

Blackwood, B. Puberty rites and initiation ceremonies in the Northern Solomons.

Broom, R. Early Man in South Africa.

Cammiade, L. A., and F. J. Richards. Climatic changes in palaeolithic India.

Cipriani, Dr. The origin of the Bantu.

Donohugh, Mrs. A. C. L. A Luba tribe in Katanga: customs and folk-lore.

Dowdall, Judge. The psychological origins of law.

Evans, Arthur J. Discovery of the temple tomb of the House of Minos.

Forde, C. Daryll. Hopi agriculture and land ownership.

Gardner, E. W. and G. Caton-Thompson. Preliminary work on the geology and archaeology of the Kharga depression, Egypt.

Garrod, D. A. E. Excavations at the Wady al-Mughara in 1931.

Gray, H. St. George. Results of excavations conducted at Avebury.

Hart, C. W. M. Tribal government in Australia.

Heurtley, W. A. An early bronze age site in western Macedonia.

Lamb, W. Escavations in Thermi.

Lowe, C. Van Riet. Early palaeolithic cultures in South Africa.

Lugard, Lord. Africa in transition.

Mair, L. Economic man in primitive society.

Murray, Hubert. The scientific method as applied to native labour problems in Papua.

Murray, M. A. An ossuary of the Bronze Age in Minorca.

Nash-Williams, V. E. The early Iron Age hill settlement at Llanmelin, Monmouthshire.

Osborn, Henry Fairfield. The geologic age of Pithecanthropus, Eoanthropus, and other fossil men determined by the enamel-ridge-plate-grinding-tooth-measurement of the proboscidea with which they were geologically contemporaneous.
Petrie, W. M. Flinders. Excavations at Old Gaza.
Pitt-Rivers, G. Anthropological approach to eugenics.
Pritchard, E. E. Evans. The Neuer of the Nilotic Sudan.
Radcliffe-Brown, A. R. The present position of anthropological studies.
Seligman, C. G. Human hybrids.
Seligman, Prof. and Mrs. C. G. The social organisation of the Nilotes.
Sergi, Sergio. Neanderthal man in Italy: the Saccopastore skull.
Smith, G. Elliot. Peking Man.
Suk, V. Physical anthropology and ethnic pathology.
Thilenius, G. Some biological view-points in ethnology.
Thompson, Campbell. Three seasons' excavations at Nineveh.
Vassitz, Dr. The Vinča site.
Vowles, H. P. The early evolution of power engineering.
Wedgwood, C. A critical analysis of the so-called avoidance and joking relationships, with special reference to Melaneisa.
Wheeler, R. E. Mortimer. Summary of the current excavations on the prehistoric and Roman sites of Verulamium (St. Albans).

DISCUSSION AND CORRESPONDENCE

The Race Called Neandertal

Attention has just been focused anew on the fossil human race known as Neandertal by Theodore D. McCown's record-breaking discovery on May 3, 1932, of three Neandertal skeletons in the Cave of the Kids (Mugharet es-Sukhūl) at the foot of Mount Carmel near Haifa, Palestine. McCown, son of Dean C. C. McCown of the Pacific School of Religion, is an assistant in the Department of Anthropology at the University of California. For three seasons he has been field representative of the American school of Prehistoric Research, assigned to the latter's joint expeditions with the British in Palestine. He was also a student of the American School of Prehistoric Research during the summer term of 1930.

McCown is now in charge of the fourth joint expedition, taking the place of Miss Dorothy A. E. Garrod of the British School. It was while working under the direction of Miss Garrod in May, 1931 that McCown found the skeleton of a Neandertal child, a complete study of which has since been made in London by him and Sir Arthur Keith. Their joint paper on the child will be read at the International Congress of Prehistoric and Protohistoric Sciences to be held in London, August 1–7. It is hoped that the three Neandertal skeletons found on May 3 may be in London and sufficiently disengaged from the matrix in which they were found to be viewed by the members of the Congress.

The Neandertal race was the author of the culture known as Mousterian. The skeletons were found in a relic-bearing level and the relics there are all of the Mousterian type. Even if no artifacts had been found, the skeletons would be referred to the Neandertal race because they conform physically to the Neandertal type, which became extinct in Palestine and Europe at the beginning of the Upper Paleolithic Period, perhaps 40,000 years ago. They were superseded by the Cro-Magnon race of *Homo sapiens* type.

The present is the third discovery in eight years of Neandertal skeletal remains in Palestine. The first discovery was made by F. Turville-Petre in 1925, in the Cave of the Robbers (Mugharet el-Zuttiyeh) in the valley of the Column (Wady el-Amud), near Tabgha. The cranial fragments are of a male about 25 years old and include the frontal bone almost entire, the right cheek bone, and a portion of the upper jaw. These are all we have of what is known in the literature as the "Galilee skull." They came from a level rich in artifacts of the Mousterian type.

The skeleton discovered in May, 1931, in the Cave of the Kids, by McCown is that of a child some two and a half to three years old. The brain case is practically complete; there is enough of the lower jaw to make a satisfactory reconstruction, and the remainder of the skeleton is well preserved considering the age of the subject.

The present is the fourth season of joint excavations in four caves near the foot of Mount Carmel. The results are to appear in a joint publication of two volumes: one for the cultural remains and one for the human skeletal remains. The four caves have already yielded scores of thousands of artifacts representing various

epochs from the Mousterian up to historic time. The deposits, especially the Mesolithic, are relatively rich in human skeletal remains. Some twenty skeletons dating from the Mesolithic Period have been found in the Mugharet el-Wad alone. Fragmentary bones of the Cro-Magnon race have been found in the Aurignacian deposits. The prize discoveries, however, are those of the Neandertal child found a year ago and the three adult Neandertal skeletons just reported. After publication the Neandertal skeletons will be returned to Palestine and, with the Galilee skull, will repose in the Museum of the Department of Antiquities in Jerusalem, funds for the building of which have been provided by John D. Rockefeller, Jr. Some of the Mesolithic skeletons and about half of the cultural remains will be distributed to the institutions in America which are helping to support the work of the American School of Prehistoric Research.

GEORGE GRANT MACCURDY
Director, American School of Prehistoric Research

Editor's note.—A later communication from Dr. MacCurdy announcing the finding of four other skeletons, and a letter from Theodore McCown to Dean C. C. McCown reporting a fifth, brings the total number of skeletons discovered to nine. Dr. MacCurdy states further: "A tracing just received of one of the best preserved adult skulls shows that the latter agrees with the European type in the marks of a powerful musculature, massive brow ridges, taurodont dentition and prognathism. But the prognathism is confined largely to the upper jaw and the dentition. The chin can scarcely be called receding and the frontal and parietal portions of the skull are more highly developed than in the known European examples. It is especially fortunate that these seven [eight] skeletons, as well as that of a Neandertal child found (also by McCown) in the same cave one year ago, were all in situ and associated with industrial remains of the Mousterian Epoch. McCown states that one of the adult skeletons was found clasping to his breast a huge jaw of the wild boar. The skeletons were lying near the bed rock and in a strong matrix. McCown is bending every effort to remove them safely from the deposit and ship them to London in time for exhibition at the International Congress of Prehistoric and Protohistoric Sciences, August 1–6."

ON PRIMITIVE MUSIC

In the AMERICAN ANTHROPOLOGIST for 1932, no. 1, Miss H. H. Roberts has published a valuable discussion of methods in the study of primitive music.[1] Inasmuch as I find myself in agreement with the author on most points, I notice with regret that some of my previous statements as quoted in her article assume a meaning which was not intended. Since the methods employed in approaching the study of primitive music are still subject to considerable discussion, I may be permitted to clarify my statements.

The author's quotations are taken from my review of her "Songs of the Copper Eskimo" (vol. 14 of the Canadian Arctic Expedition of 1913–18, Southern Party; Ottawa, 1925) which appeared in JAFL 39: 218–225.

On pp. 82–83 of her article Miss Roberts refers to the major and minor third. Quoting from her footnote 3:

[1] Melodic composition and scale foundations in primitive music, AA 34:79–107.

This does not mean, as one writer has contended (Herzog, in JAFL 39: 220), that primitive melodies may not be termed major or minor except in cases where European influence is obvious.

Further:

His contention that our conceptions of major and minor are based *solely*[2] on the third above the tonic is unwarranted, as is his statement that thirds are so variable that they may never be taken as criteria.

I should like to reprint my original statement:

Turning to major and minor, in our consciousness they are strongly connected with and *chiefly*[2] determined by the major and minor third above the tonic. Attempts to handle primitive music with the terms major and minor rely *mainly*[2] upon this conception.[3]

On p. 89 the author refers to the neutral third:

As an argument to explain what I considered a possibly deliberate play between minor and major thirds in a number of Copper Eskimo songs, a reviewer[4] brings forward the intent to employ the neutral third.

Further:

The term "neutral third" has become somewhat like "Pentatonic" in its usage—a favorite point of argument for the sake of theory. It is also a convenient term with which to dispose of troublesome thirds which fluctuate between major and minor for other reasons than as an attempt to split exactly the perfect fifth, which Mr. Herzog gives as the origin of its use. True, it lies in the middle of the perfect fifth interval, but as a matter of fact, it can have originated in several ways, least probable of which would be the one designated. Unfortunately, as Mr. Herzog himself states in the same paragraph, thirds are the most variable intervals, not merely in primitive music (as he contends), but in our own vocal music, and cannot be so easily disposed of as he imagines.

On p. 220 of my review, to which reference is made, I have suggested that neutral thirds *too* may possibly (but not necessarily) furnish an explanation where thirds are difficult to identify in terms of "major" and "minor":

Another difficulty in dealing with thirds is the so-called neutral third.

Further:

. . . *in many of the cases*[5] interpreted by her as "play between major and minor," "modulation" or "use of chromatics," the neutral third would *probably*[5] furnish the explanation.

On p. 95 of her article, Miss Roberts goes into the question of evaluation, in connection with the use of the term "primitive":

Probably no two groups of "uncivilized" peoples are at exactly the same stage of "primitiveness,"—with some, like the Eskimo, it is clear from their lovely melodies that the apprecia-

---

[2] Italics are mine.

[3] P. 220.

[4] Reference is made to the review in a footnote.

[5] Italics are mine.

tion of tonal color value is much greater than with most North American Indians or Hawaiians. To attempt to relegate them[6] to a much lower musical level is doing them an injustice.

On pp. 220–221 of my review, to which reference is made at this point by the author, I find a technical analysis of the tonal structure of the Copper Eskimo songs, with no remarks of an evaluating or comparative character. The author's remark seems to refer, unless my analysis is questioned on a technical basis, to the statements I have made on p. 224:

The author contends that the Copper Eskimo songs are generally longer and more varied, with more frequent combinations of themes than Indian songs. In my opinion, the Copper Eskimo music, as a local development, stands above the music we know from other Eskimo areas; it seems richer than the music of some Indian areas, but inferior to others.

The question of the functioning of intervals in primitive music is sufficiently important to warrant this explanation which, I hope, will prevent a further misunderstanding of my previous comments.

GEORGE HERZOG

PREHISTORIC POTTERY AND CULTURE RELATIONS IN THE MIDDLE GILA

In brief reply to the recent criticism by the late Dr. F. C. ten Kate of the Hemingway Expedition of 1888 and 89 of my alleged neglect of early field workers in a paper published under the above title (American Anthropologist, vol. 32, no. 3, 1930) I should like to state the following.

It is assuredly not for one generation to neglect the studies of those preceding them. Dr. ten Kate admits, however, to the regret of younger archaeologists as well as of older, that no full study of the reconnaisances, excavations, or material gathered by the Hemingway Expedition was ever made or published. Consequently, what the present day archaeologist may gather of its results is limited to the one American and the four brief foreign references noted by Dr. ten Kate, or to even briefer notes in publications of men who happened to have come in contact with the expedition.

Until recently, Fewkes' detailed papers on Casa Grande, and other papers merely locating and briefly describing ruins seen, published in the Bureau of Ethnology reports, and Kidder's short survey of the section then known as the "Lower Gila," published in his *Southwestern Archaeology*, comprised the only available direct scientific data on the region now designated the "Middle Gila." Publications on work done in adjoining areas were of value, although usually rather indirectly, to those interested in the field of the Middle Gila. Pottery sequences and relationships in this region had never been thoroughly investigated; indeed, work has not been even approximately finished on these questions. Recently several institutions have interested themselves in the area—those carrying on investigations at the time my article was published being the Los Angeles Museum, the University of California, Gila Pueblo of Arizona, the Arizona Museum of Phoenix, and the Arizona State Museum in connection with the University of Arizona at Tucson.

[6] Reference is made to the review in a footnote.

As for the

> scores and scores of parallels indicating a close relationship of the "Middle" and "Upper Gila" cultures and the present pueblo culture in general,

while the modern pueblo culture is generally accepted as a continuation of that of the prehistoric period, it has never yet been proven from what branches of the prehistoric the modern has descended. Recent evidence collected by the Museum of Northern Arizona indicates that the historic Hopi pottery is a lineal descendant of prehistoric prototypes of the Jeddito district. Evolution of the wares of Pecos from prehistoric to historic times indicated that the people responsible for the late wares were probably descendants of those who had previously lived in the same district. That small groups from the arid Middle Gila trekked northward toward the end of the prehistoric period is probable, although never yet definitely proven. Evidence of intercourse and possibly of some visiting expeditions between north and south is plentiful, but when one considers the general similarity of the pueblo culture all over the southwest, it is obvious that only detailed examination of the distribution of physical or cultural characteristics distinctly peculiar to one region may be taken as evidence of the movements of the people of that region. Absolute knowledge of such distribution must depend upon more extensive excavation in the Southwest than has yet been made by all the expeditions who have ever sunk spade into these ruined dwellings.

In objecting to the statement that evidence of forced abandonment of the region was at present lacking, Dr. ten Kate avers,

> On the contrary, Cushing has proved beyond a doubt that earthquakes were one of the main causes for the abandonment of whole towns.

In *Earthquake History of the United States, Special Publication No. 149, U. S. Coast and Geodetic Survey Dept. of Commerce, 1927*, were listed but five earthquakes in Arizona. Their intensity ranged from that sufficient to crack plaster on buildings without injury to those buildings, to that capable of partially or totally destroying buildings. They are listed: 1906, Flagstaff; 1910, Flagstaff; 1912, Flagstaff district; 1913, throughout Arizona and New Mexico, details lacking; 1916, East edge of Arizona. These, it will be noted, are all in northern and eastern Arizona, mountainous and volcanic country, entirely different from the sandy plains and low mountains of the Middle Gila. Something of the shock of the earthquake of May 3, 1887, whose epicenter was in Bavispe, Sonora, Mexico, was felt as far northward in Arizona as Tucson and Tombstone. No structures then standing were destroyed. This was the only earthquake known in southern Arizona in historic times, according to old timers in the district. It is the only one reported for southern Arizona in the bulletin cited, although shocks of California earthquakes are claimed to have sometimes reached as far eastward as Yuma during the early American period.

To quote Dr. G. M. Butler, Director of the Arizona Bureau of Mines, May 13, 1931:

> Apparently most of Arizona is now, and has been for a long time, very stable. We know of no faults along which movement is taking place, and everything indicates that the stresses

have been in a state of equilibrium for a long time. I do not think that anyone would dare state positively that earthquakes did not disturb the prehistoric inhabitants in Southern Arizona, but, personally, I think it is unlikely that they did so.

FLORENCE M. HAWLEY

Arizona State Museum
Tucson, Arizona

THE CULT OF THE CROCODILE

The recent discoveries by Professor Anti of Padua University at the site of Tebtunis (Fayum, Egypt) show that crocodile worship was peculiar to that place as at Kom Ombo (Upper Egypt). The site is regarded as Graeco-Roman and dates as such from the IVth century B.C. It is evident that the local deity Sebek (Seknebtuni or Sebek, Lord of Tunis) was adopted by the Greek colonists engaged there locally in agriculture. The exact origin of the crocodile cult is undetermined. The reptile is regarded as a symbol of fertility and also strength.[1] Nilotic people seem to have regarded the reptile as a river god and there are vestiges of this belief today.

A fortress monastery, 400 feet by 200 feet, which was enclosed by a brick wall 13 feet thick and 20 feet high, was discovered at Tebtunis. The building was similar to the Coptic fortress monasteries so familiar to tourists on the Nile. The priests of the Tebtunis monastery appear to have practised all the arts and sciences for which their medieval Christian successors became famous in Europe. Definite traces of surgery, medicine, literature, painting etc. have been found in the dwellings.

This crocodile cult is found in many other places. The *Illustrated London News* of May 30, 1931 contains photographs of the sacred crocodile of Ibadan (Nigeria) which is said to be at least 150 years old and still possesses a hearty appetite.

It is a curious fact that certain natives from Argungo, near Sokoto, seem to possess the power of charming these reptiles. Pilgrims from Argungo to Mecca used to catch crocodiles in the Blue Nile (Sudan), and after killing them ate the flesh. The writer had all his servants and camel-men laid up for several days with swollen glands, which they attributed to a surfeit of crocodile flesh when traveling on the Abyssinian frontier. It is possible that strict Moslems avoid eating the flesh of the crocodile on much the same grounds that Europeans abstain from pork, Delta Nile fish, goat's milk and other recognised germ carriers in Africa.

ARTHUR E. ROBINSON

2 Brampton Road
St. Albans, Herts
England

DISCOVERIES IN PALESTINE

Tell-el-Ajjul

It gave us much pleasure to renew our personal acquaintance with Sir Flinders Petrie at his recent exhibition at London University College.

[1] When I was in Nubia the ovaries of the crocodile were publicly sold and eaten as aphrodisiacs and a cure for barren women. H. E. R.

The excavations at Tell-el-Ajjul are of more than local anthropological importance. The results controvert definitely the popular notion that the Hyksos or Shepherd Kings were merely nomads. Tell-el-Ajjul was abandoned about 2000 B.C., probably through malaria, and a new site was fixed at Gaza, five miles to the north. A secret, 500-feet-long tunnel was found which communicated with the town and the outside plain. The earliest remains were found in domed chambers of the copper age, and the pit tombs date from the bronze age. In some cases the master of the house was buried with his asses. Skeletons of the horse (22-inches-long skulls) introduced by the Hyksos of that period have been found with human remains in adjoining graves. Cranial and other measurements have not been published yet.

Beside one of the larger houses there was a shrine, plastered white inside, and approached past a low bench embedded with sea shells in a sunken floor with a vent or drain. At first sight we thought that this was the floor of a ceremonial purification chamber for females, as the symbolic significance of certain classes of shells is well known to all anthropological students. With the exception of three or four which are pierced, all the shells appear to have been gathered from living shell fish. Sir Flinders Petrie considers that the building was used for foot-washing before entering the shrine.

This is merely a preliminary notice. An illustrated article by Sir Flinders Petrie appeared in the Illustrated London News of June 20, 1931, and it is to be hoped that the appeal for funds will enable the work to be continued at this ancient Caananitish city.

ARTHUR E. ROBINSON

LETTERS

The Editor
American Anthropologist

DEAR SIR:

During the night before Christmas eve a diastrous fire destroyed a portion of the library of the University of the Witwatersrand, including the large collection of books belonging to the department of social anthropology.

The loss was only partially covered by insurance, and it will be readily understood that, in these days of world-wide depression, it is difficult to raise the money for the prompt re-purchase of the books destroyed.

The works of all the leading American anthropologists were very fully represented in the library, and constantly referred to in the lectures and used by the students. Their loss is especially serious.

In these circumstances, I venture to appeal to my anthropological colleagues at American universities to help me to build up again, as soon as possible, an adequate working library for my students. Author's copies or duplicates—addressed to The Librarian, University of the Witwatersrand, Johannesburg, South Africa—will be

gratefully acknowledged, and the donor's name, together with the occasion of the gift, recorded in the books themselves.

Yours truly,
AGNES WINIFRED HOERNLÉ
Lecturer in Social Anthropology

University of the Witwatersrand
Johannesburg

Editor, American Anthropologist

SIR:

May I call the attention of your readers to the Seventh Seminar in Mexico, meeting in Mexico City July 3–23?

The Seminar in Mexico is a "cooperative study of Mexican life and culture." Its membership is open to people who have an interest in international relations and who have a genuine desire to understand the Mexican people. The three weeks' program of the Seminar includes lectures, round table conferences and field trips.

The lectures, given by authorities in Mexico, present various phases of Mexican life in the fields of education, art, international relations, economics, music, folklore, sociology and government. Among the leaders who will lecture before the Seminar are Moises Saenz, Carlos Chavez, Ramon Beteta, Diego Rivera and Rafael Ramirez.

The round tables give small groups the opportunity to study and discuss some subject in their particular field of interest. The leaders and their subjects in this year's session include Judge Florence E. Allen on International Relations, Dr. Ernest Gruening on Economics, Count René d'Harnoncourt on Arts and Crafts, Dr. Charles W. Hackett on the History of Mexico, Miss Elizabeth Wallace on Latin American Literature. Of special interest this year will be the *round table on Archaeology* led by Dr. Frans Blom. Among other subjects, this group will study the recent discoveries made at Monte Alban, and at the close of the Seminar a trip will be made to Oaxaca to study the pyramids themselves.

Field trips will be made to Puebla, Oaxtepec, Xochimilco, Cuautla, Cuernavaca, and Taxco where members of the Seminar will be guests at the "casa" of the Committee. The object of these trips is to visualize the historical background, to see the schools at work and to understand the indigenous culture of Mexico.

Mexico is an excellent place for a vacation. The summer is cool and the country affords many tempting opportunities.

Inquiries and applications should be addressed to:

HUBERT C. HERRING
For the Committee on Cultural Relations with Latin America

112 East 19 Street
New York City

ANTHROPOLOGICAL NOTES AND NEWS

Sociologus

The *Zeitschrift für Völkerpsychologie und Soziologie*, edited by Professor Richard Thurnwald (Berlin), will henceforth appear in a bilingual edition under the title of *Sociologus*. As the Editor informs us, he intends to present an equal number of English and German articles, with summaries in the alternate language. Reviews will also be in both languages.

The tendency of *Sociologus* will be to emphasize the realistic trend in Sociology. While philosophical interpretations are not to be excluded, the stress will be on material gained inductively. We reproduce the Prospectus issued.

Prospectus

This journal aims to become an international forum for the exchange of ideas referring to sociology and social psychology. No science can be limited to one country. It should rely on the cooperation of all. Particularly is this true of sociology, the science of society. Any aggregation of people takes an egocentric view of itself and others. We cannot afford to contemplate it quite objectively. But we can consider it from the angle of different aggregations. The attitudes of mind of societies toward each other, with their respective traditions and cultural patterns, can, to a certain degree, replace the value of the objectivity in other sciences. Such a "human socialization" of the science of society seems indispensable. The edition of this journal, in two languages at least, may help in opening up an avenue of mutual fructification of views and studies as well as in solving the tremendous social, political, and national problems of our time. The social sciences should not evade the responsibility of this task in which all nations should join.

These are lofty aims, and we can assure Dr. Thurnwald of our hearty sympathy and our willingness to collaborate with him.

A Summer Seminar on Far Eastern Studies will be held at Harvard University, July 6 to August 17, 1932, under the auspices of the Harvard-Yenching Institute, the Committees on the Promotion of Chinese and on Japanese Studies of the American Council of Learned Societies, and the Society for the Promotion of Japanese Studies.

The aim of the Seminar is to bring together for six weeks . . . a group of trained and mature scholars who, although their major training has been in other fields, find it necessary or desirable to offer instruction in the Far Eastern civilizations.

The group will meet daily, excepting Saturday, for general directed round-table discussion under the leadership of three specialists in Far Eastern studies, and in smaller groups for the consideration of specific problems. The discussions will supplement factual information with consideration of bibliography, tools of research and instruction, criteria for differentiating fact and opinion, status of present-day research in the fundamental problems, organization of Far Eastern studies and repositories of information concerning them. Arrangements will be made for special instruction in the Chinese and Japanese languages specifically designed to meet the needs of the scholars who attend. Plans are in progress for special exhibitions at museums in and near Boston and of private collections of Far Eastern materials. A consider-

able number of special lectures will be offered by authorities in Far Eastern subjects. It is possible that conferences will be held on the promotion of Far Eastern studies, which will bring to Cambridge most of the scholars engaged in those studies at that time in America.

The staff of instruction is:

Professor of History and Director of the Seminar: ARTHUR W. HUMMEL, Chief of the Division of Chinese and Japanese Literature, Library of Congress, Washington, D. C.

Professor of Philosophy: LUCIUS C. PORTER, Professor of Philosophy in Yenching University and Visiting Professor at Harvard University.

Professor of Oriental Art: LANGDON WARNER, Fellow of the Fogg Art Museum for Research in Asia and Lecturer in the Fine Arts at Harvard University.

Further information may be obtained by addressing the Secretary of the Committee of Direction, Mortimer Graves, American Council of Learned Societies, 907 Fifteenth Street, Washington, D. C.

THE CATHOLIC ANTHROPOLOGICAL CONFERENCE held its seventh annual meeting at the Catholic University of America, Washington, D. C., March 29, 1932. The programme included: Rev. Joseph Diehl, the Position of Woman in Samoan Culture; Dr. Anna Dengel, The Woman of India at Home; George E. Noronha, The Changing Outlook of the Women of India; Regina Flannery, The Position of Women among the Mescalero Apache; J. N. B. Hewitt, The Position of Woman among the Iroquois; Rev. John M. Cooper, The Position of Women in Primitive Culture.

GRATIFYING PROGRESS has been made in the collection of material relating to *Indonesian Customary Law* as a result of Dr. Holleman's mission to the Philippine islands, under the auspices of the American and Philippine sections of the American Council of Learned Societies committee. Thanks to the effective arrangements made for Dr. Holleman's visit by Dr. Rafael Palma, and especially to the generous and public-spirited coöperation of Professor H. O. Beyer of the University of the Philippines, there have been transcribed 10 manuscript volumes of exceedingly valuable material, gathered by Professor Beyer during a residence of many years in the Islands, and thoroughly illustrative of the application of customary law in all its forms.

THE AMERICAN ASSOCIATION OF PHYSICAL ANTHROPOLOGISTS which met in March in Washington, D. C., was addressed by Dr. C. J. Connolly, of the Catholic University of America, on the brains of apes. Dr. Connolly included in his report the statement that of the four anthropoid apes the gorillas are dolichocephalic, the other three inclined to be brachycephalic; that the greater development of one side of the brain in humans, which accompanies pronounced right or left handedness, is practically absent in apes, what little difference exists generally being in favor of the right hemisphere. In apes, as in humans, only a slight sex difference in the appearance of the brain can be noted; the brain of the female ape is apt to be smaller than that of the male but is larger in proportion to the body weight.

Differences in the anatomy of Whites and Negroes, found through studies made at Washington University, St. Louis, were reported to the Association by Dr. Robert J. Terry and Dr. Mildred Trotter. Dr. Terry stated that the collar bone of Ne-

groes tends to be longer than that of American Whites, and distinctly narrower at the end where it is bound by ligaments to the shoulder blade. At this end, powerful lifting muscles are attached, and in the white man the broader, spatulate end of the collar bone affords a greater area for attachment of the muscles. Dr. Trotter reported that in studying the relation of the sciatic nerve in the leg to the muscle which turns the thigh outward, she had found less variation among whites than among Negroes.

Racial tendencies to a distinctive shape and development of the tympanic bone of the ear were reported by Dr. T. D. Stewart, United States National Museum. Dr. Stewart stated that the peculiarly thick and massive development of this bone in Eskimo skulls he has examined is not explained. It does not affect the hearing, nor does it appear to be a protective adaptation against letting cold into the ear; Indian tribes of northern Canada have tympanic bones of no particular thickness.

Dr. Harold Cummins, Tulane University, reported the first scientific investigation of palm and sole patterns of North American Indians, in pursuit of the study of characteristic racial differences of man. Dr. Cummins found in Shoshoni-Arapaho prints "a definite racial trend," emphasized as distinctive when the prints were compared with those of white subjects, but showing many points of similarity with the prints of Eskimos and Chinese. One advantage of dermatoglyphics as a criterion of racial differences, Dr. Cummins said, is that these ridged patterns on the hand and foot are established in their final form long before birth, remaining unchanged throughout the life of the individual. The prints are thus entirely predetermined. There is no question of alteration by environment or experiences such as is sometimes raised when head form and stature are cited as racial characteristics.

A SYMPOSIUM ON ILLINOIS PREHISTORY marked the first meeting of the newly organized section in Anthropology of the Illinois Academy of Sciences which met in Chicago May 6 and 7. Papers read included studies of the archaeology of the Illinois river, the Rock river country, the Wabash valley, and the Cahokia region near St. Louis, and of the geographic factors influencing the movements and settlements of prehistoric peoples in southern Illinois. Professor Fay-Cooper Cole spoke on the methods of archaeology employed in the upper Mississippi region with particular reference to Illinois. Dr. M. M. Leighton, State Geological Survey of Illinois, discussed the age and chronology of various Illinois river and Mississippi valley mounds as determined from the study of soil profiles and the processes of weathering. Dr. W. C. McKern sketched the difficulties of synthesis and interpretation of local site chronology, in terms of the regional distribution of industries and pottery features. Dr. Bruce Merwin presented suggestions concerning the presence of prehistoric Siouian sites in southern Illinois.

AWARDS BY THE SOCIAL SCIENCE RESEARCH COUNCIL, of grants-in-aid and fellowships in Anthropology during 1931–1932, have been announced as follows:

Research fellowships: Haviland Scudder Mekeel, "Culture Change in its Psychological and Sociological Aspects;" Morris Edward Opler, "The Present-day

Culture of the Apache Indians on the Mescalero Reservation;" Hortense Powdermaker, "A Functional Study of the Negro Family."

Grants-in-aid of research: Edward Winslow Gifford, to aid in the preparation of a study of the ethnography of the Yavapai Indians; John C. Parish, to aid in the completion of a history of the Indian country of the Trans-Allegheny region, 1733–1763; Hortense Powdermaker, for the preparation for publication of "Women in Primitive Society;" William H. Wiser, to aid in the completion of a sociological study of a North Indian village.

The Research Fellowships are open to both men and women of American or Canadian nationality provided (1) they are not over thirty-five years of age, and (2) they are the holders of the Ph.D. degree or its equivalent in terms of other types of training and experience. The closing date for making application for 1933–34 is December 1, 1932.

The grants-in-aid are open to mature scholars, without reference to age, whose ability to do productive research is attested by first-class completed work. The project for which aid is sought must be well under way and promise significant results.

Further information may be obtained by addressing the Fellowship Secretary and the Secretary of the Committee on Grants-in-Aid, respectively, Social Science Research Council, 230 Park Avenue, New York City.

EXHIBITION OF AMERICAN ART. At the Prussian Academy of Art Dr. Walter Lehmann (Berlin) arranged a noteworthy exhibition of specimens illustrating the artistic achievement of the higher American cultures. Not only the treasures of the Museum für Völkerkunde in Berlin but also other German institutions, e.g. Hamburg and Munich, as well as the private collection of Heinrich Hardt and the Gaffron family were utilized. The exhibition was opened on December 12, 1931 and closed January 17, 1932.

AT ITS ANNUAL MEETING on April 27 the National Academy of Sciences elected to membership Dr. John R. Swanton. The other anthropologists in the Academy's Division of Anthropology and Psychology are: Franz Boas (chairman of the Division, 1932); J. H. Breasted; W. H. Holmes; A. Hrdlička; A. L. Kroeber; B. Laufer; R. H. Lowie; C. H. Merriam; C. Wissler.

THE BIOLOGICAL FELLOWSHIP BOARD of the National Research Council in February appointed Miss I. T. Kelly (University of California), who is to study a Basin Shoshonean tribe from an ethnographic and geographical point of view. In April the Board appointed Miss May Mandelbaum, who intends to investigate certain socio-anthropometric problems raised by Roscoe's book on *The Baganada* of East Africa.

THE DIVISION OF ANTHROPOLOGY AND PSYCHOLOGY held its annual meeting on Friday, April 22, 1932. Professor A. T. Poffenberger (Columbia) and Professor Ralph Linton (Wisconsin) were elected chairman and vice-chairman, respectively, for the year beginning July 1, 1932.